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CHARTER,

CONSTITUTION, AND BY-LAWS

OF THE

OBSTETRICAL SOCIETY

OF PHILADELPHIA.

PHILADELPHIA:
ALLEN, LANE & SCOTT'S PRINTING HOUSE,
No. 233 South Fifth Street.
1877.

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CHARTER

OF THE

OBSTETRICAL SOCIETY OF PHILADELPHIA.

WHEREAS, The undersigned, citizens of the Commonwealth of Pennsylvania, together with other citizens of the said Commonwealth, having established, in the city of Philadelphia, a society for the encouragement and promotion of the study of obstetrics and the diseases of women and children, are now desirous of being incorporated agreeably to the provisions of the act of the General Assembly of the Commonwealth of Pennsylvania, entitled "An act to provide for the incorporation and regulation of certain corporations," approved the twenty-ninth day of April, Anno Domini one thousand eight hundred and seventy-four, they therefore declare the following to be the name, objects, and conditions of the said corporation:—

I. The name of the corporation shall be "THE OBSTETRICAL SOCIETY OF PHILADELPHIA."

II. The purpose for which the corporation is formed is the advancement of the study of obstetrics and the diseases of women and children, by the presentation of specimens, the publication of papers or essays, the free discussion of subjects of interest properly belonging to these several branches of medical science, and at a proper time, the offering of prizes for papers, essays, or experiments relating to these subjects.

III. The place where the business of the said corporation is to be transacted is the city of Philadelphia.

IV. The term for which the said corporation is to exist shall be perpetual.

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V. The following are the names and residence of the members of the said corporation:—

Francis G. Smith,
Lewis Rodman,
William Hunt,
John F. Meigs,
James Tyson,
Robert P. Harris,
Horace Williams,
T. Hollingsworth Andrews,
Roland G. Curtin,
R. M. Girvin,
James V. Ingham,
William G. Porter, Jr.,
George A. Rex,
W. Charles Perkins,
Charles A. McCall,
William T. Taylor,
Milton B. Musser,
J. Stockton Hough,
James B. Walker,
B. B. Yocum,
William R. Dunton,
John H. Packard,
James F. Wilson,
James H. Hutchinson,
W. H. H. Githens,
Edward L. Duer,
Albert H. Smith,
De Forest Willard,
Jacob Roberts,
Wharton Sinkler,
John L. Ludlow,
Thomas Betts,
William H. Ford,
Thomas J. Yarrow,
James C. Wilson,
Claudius R. Prall,
H. Lenox Hodge,
Daniel Bray,
W. H. Wallace,
Edward T. Bruen,
Ellwood Wilson,
Joshua G. Allen,
Lewis D. Harlow,
William Goodell,
Charles H. Thomas,
D. Murray Cheston,
Richard A. Cleemann,
William Pepper,
Oliver P. Rex,
J. Cheston Morris,
Edward W. Watson,
Samuel S. Stryker,
Elliott Richardson,
George Hale, Jr.,
A. C. W. Beecher,
William H. Parish,
Reuel Stewart,
John Ashhurst, Jr.,
Joseph V. Kelly,
John M. Keating,
J. S. Eshleman,
Arthur V. Meigs,
D. Miller Barr,
Wallace W. Lovejoy,
Robert Meade Smith,
Ross R. Bunting,
Alfred Whelen,
Abner F. Chase,
Nathan Hatfield,
Henry M. Fisher,
John Guiteras,
Andrew Nebinger,
William S. Stewart,
A. G. B. Hinkle,
Washington H. Baker,
Eugene P. Bernardy.

All of whom reside in the city of Philadelphia.
No shares have been subscribed.

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VI. There will be no Directors. The affairs of the said corporation shall be managed (subject to the direction of the members at their meetings) by a President, two Vice-Presidents, a Secretary, a Treasurer, a Curator, and such other officers and committees as may be prescribed by the By-Laws. The following are the names and residence of those who are chosen officers for the first year:—

President,

JOHN H. PACKARD, M. D.

Vice-Presidents:

LEWIS D. HARLOW, M. D.,
RICHARD A. CLEEMANN, M. D.

Secretary,

W. H. H. GITHENS, M. D.

Treasurer,

D. MURRAY CHESTON, M. D.

Curator,

WILLIAM H. PARISH, M. D.

All of whom reside in the city of Philadelphia.

VII. There will be no capital stock. Certificates of membership will be issued.

Witness our hands and seals, this twenty-sixth day of March, A. D. eighteen hundred and seventy-seven (1877).

JOHN H. PACKARD,	[SEAL]
LEWIS D. HARLOW,	[SEAL]
D. MURRAY CHESTON,	[SEAL]
W. H. H. GITHENS,	[SEAL]
J. V. INGHAM.	[SEAL]

Signed and sealed in the presence of us:

CITY AND COUNTY OF PHILADELPHIA, *ss.*

It is hereby certified that on the twenty-sixth day of March, A. D. 1877, before me, the Recorder of Deeds in and for the City and County of Philadelphia (being the county in which the business of the above-named corporation is to be transacted), personally appeared John H. Packard, W. H. H. Githens, and J. V. Ingham, three of those who subscribed to the foregoing charter or certificate of incorporation, and acknowledged the said instrument to be their act and deed, and desired that the same might be recorded as such according to law.

Witness my hand and seal of office this twenty-sixth day of

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March, Anno Domini one thousand eight hundred and seventy-seven (1877).

JOS. K. FLETCHER,

[SEAL] *Deputy Recorder.*

And now, Saturday, April 14th, A. D. 1877, the foregoing certificate of incorporation or charter of "THE OBSTETRICAL SOCIETY OF PHILADELPHIA," duly acknowledged by three of the subscribers thereto, before the Recorder of Deeds for the City and County of Philadelphia (the county in which the business of the above-named corporation is to be transacted), the same being duly certified under his hand and official seal, as required by law, having been presented to the Honorable Thomas R. Elcock, a law judge of the said county, accompanied by proof of the insertion of notice of the intention to apply for such charter in the "Press" and the "Evening Telegraph," two newspapers of general circulation printed in the said county, and also in the "Legal Intelligencer," printed in the said county, for three weeks, setting forth briefly the character and object of the corporation to be formed, and the intention to make application therefor; having been perused and examined by the said judge, and the same being found in the proper form and within the purposes named in the first class specified in the second section of the act of the General Assembly of the Commonwealth of Pennsylvania, entitled "An act to provide for the incorporation and regulation of certain corporations," approved the twenty-ninth day of April, A. D. 1874, and appearing lawful and not injurious to the community, it is ordered and decreed that the said charter be and is hereby approved, and upon the recording of the said charter and of this order in the office of the Recorder of Deeds for the City and County of Philadelphia, the subscribers to the said charter and their associates shall be a corporation for the purposes and upon the terms therein stated.

[Seal of Court of Common Pleas, No. 4, for the County of Philadelphia.] THOMAS R. ELCOCK.

Recorded in the Office for Recording Deeds for the City and County of Philadelphia, in Charter-book No. 3, page 326, &c.

Witness my hand and seal of office, this fourteenth day of April, A. D. 1877.

D. H. LANE,

[SEAL] *Recorder.*

Endorsed: "604. M'ch, 1877. C. P., No. 4. Charter of The Obstetrical Society of Philadelphia. Filed M'ch 26th, 1877."

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No. 210 South Fourth Street,
Philadelphia, April 26th, 1877.

Hon. J. F. Temple, Auditor-General, Pennsylvania,

Sir:—Will you please register the following particulars in reference to "The Obstetrical Society of Philadelphia" in your office, in accordance with requirements of the act of Assembly in such case made and provided.

The name of the corporation is "The Obstetrical Society of Philadelphia."

The date of incorporation is the fourteenth day of April, 1877.

The act of Assembly under which the society is incorporated is the act entitled "An act to provide for the incorporation and regulation of certain corporations," approved April 29th, 1874.

The place of business is the city of Philadelphia. There is no stock, and no capital has been paid in. The name of the president is John H. Packard, M. D., and of the treasurer is D. Murray Cheston, M. D.

Very respectfully,

ALEXANDER D. CAMPBELL,
Solicitor.

Endorsed: "The Obstetrical Society of Philadelphia." Registered April 27th, 1877.

Auditor-General's Office,
Harrisburg, April 27th, 1877.

I hereby certify that the above and foregoing is a true copy of the original remaining on file in this department.

Witness my hand and seal of office the day and year aforesaid.

Wm. J. Bayano, for
J. F. TEMPLE,
[seal] *Auditor-General.*

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CONSTITUTION

OF THE

OBSTETRICAL SOCIETY OF PHILADELPHIA.

1. The purpose of the Society, as defined by its charter, is the advancement of the study of obstetrics and the diseases of women and children, by the presentation of specimens, the publication of papers or essays, and the free discussion of subjects of interest properly belonging to these several branches of medical science, and at a proper time, the offering of prizes for papers, essays, or experiments relating to these subjects.

2. Every Resident Member shall pay an entrance fee and an annual tax of such amount as may from time to time be prescribed by the By-Laws.

3. All members of the Society shall be bound and abide by its Constitution and By-Laws.

4. *Resident Members* only shall be entitled to vote at meetings of the Society, or to any interest in the property of the Society. Every such member shall have an equal share in such property, which shall not, however, be assignable in any manner whatsoever, and which shall terminate absolutely, and become vested in the Society, immediately upon his ceasing to be a member, whether by death, resignation, or otherwise howsoever.

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BY-LAWS.

ARTICLE I.

Members.

1. There shall be four classes of members:—Resident, Associate, Corresponding, and Honorary, all of whom shall be practitioners of medicine, of good character and standing in the profession, and specially interested in the study of Obstetrics or the Diseases of Women and Children.

2. *Resident Members* shall reside in the city of Philadelphia; upon the removal of any Resident Member from the city of Philadelphia, he may, upon making application in writing to the Secretary of the Society, become an Associate Member, and shall not be thereafter entitled to vote at meetings of the Society.

3. *Associate Members* shall be residents of the State of Pennsylvania (without the corporate limits of the city of Philadelphia), or of the States of New Jersey or Delaware, and shall be entitled to receive a copy of the transactions of the Society upon the payment of two dollars per annum.

4. Corresponding Members shall be residents of the United States of America, but not residents of the States of Pennsylvania, Delaware, or New Jersey; their number shall at no time exceed twenty.

5. Honorary Members shall not be residents of the United States; their number shall at no time exceed twelve.

6. Upon the removal of any Associate, Corresponding, or Honorary Member to the city of Philadelphia, he may, upon making application in writing to the Secretary of the Society, and paying the entrance fee, become a Resident Member, and shall be thereafter liable to pay annual dues.

7. Resident Members only shall be entitled to vote at meetings of the Society.

8. No Associate, Corresponding, or Honorary Member shall be liable to pay an entrance fee or annual dues.

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ARTICLE II.

Election of Members.

1. No person shall be eligible for Resident Membership until he shall have signified his desire for election, after which his application must be presented by three Resident Members, and read by the Secretary at three successive stated meetings of the Society, at the third of which be shall be balloted for (provided the Secretary shall have given due notice of the proposed election), and a four-fifths vote of the members present shall be necessary to elect.

2. No election for membership shall be held unless at least twelve Resident Members are present, one of whom shall have signed the application.

3. Associate, Corresponding, and Honorary Members shall be elected after the same form and manner as Resident Members.

4. No election shall be deemed complete, and no person elected shall be deemed a member, unless, in case of a person entitled to Resident Membership, he shall within three months thereafter sign the Constitution and By-Laws, and pay the entrance fee to the Treasurer, or, in the case of a person elected to Associate, Corresponding, or Honorary Membership, the Secretary shall, within six months thereafter, receive from him a written acceptance of his election; and upon a failure to comply with these requirements, in either case, the election shall become absolutely void: *Provided*, that the Secretary shall have sent notice of his election to the person elected, within ten days thereafter, informing him of this section of this By-Law and of the class of membership to which he has been elected.

ARTICLE III.

Certificates of Membership.

1. Every member shall be entitled to receive a certificate of membership in the following form:—

THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

At a meeting of this Society, held on the day of 18

of

was elected

President.

} *Vice-Presidents.*

Secretary.

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The seal of the Society, attesting the signatures of the President, two Vice-Presidents, and Secretary, shall be affixed to every such certificate.

ARTICLE IV.

Entrance Fee and Annual Dues.

1. The entrance fee, payable by Resident Members only, shall be five dollars, payable to the Treasurer, within three months after election.

2. Every Resident Member shall contribute the sum of three dollars annually, which shall be payable to the Treasurer during the first week in January in each year.

3. Any member who shall omit to pay his annual dues for the period of twelve months, after the same shall have become payable, shall thereupon cease to be a member of the Society: *Provided*, That the Secretary shall have sent him notice that such dues have become payable, and of this By-Law, once at least six months, and again at least one month before the expiration of such period of twelve months.

ARTICLE V.

Meetings.

1. Stated Meetings.

1. The regular stated meetings of the Society shall be held at the hall of the Society, in the city of Philadelphia, or at such other place as the Society may from time to time select, upon the first Thursday of every month, at eight o'clock, P. M., except when such day shall be a legal holiday, when the meeting shall be held on the following Friday at the same hour.

2. The Secretary shall, on the Tuesday preceding each stated meeting, send to each Resident Member notice of the time and place thereof, together with the subjects to be discussed, the titles of all papers to be read, and the nature of all specimens to be presented thereat, and of proposed elections.

3. Each member shall be entitled to introduce a visitor at any stated meeting; but the same person, unless a hospital resident, shall not be introduced as a visitor at more than three such meetings during the same year.

4. No paper shall be read or specimen presented at any stated meeting, unless notice thereof shall have been given to the Secretary on or before the Monday preceding such meeting, except

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by consent of the Society; nor shall any paper presented or read be published elsewhere than in the proceedings of the Society, without the consent of the said Society.

5. The order of business at stated meetings shall be as follows:—

The reading of the minutes of the last meeting (exclusive of the minutes of private business).

The introduction of newly-elected members.

The exhibition of specimens, accompanied by written or verbal communications relating thereto, by the member or visitor presenting them.

Remarks upon such specimens or communications by any other member or visitor.

Clinical histories, either written or verbal, essays and discussions upon any subject comprehended within the scope of the Society.

Private business (all visitors having retired), in the following order:—

The reading of the minutes of the private business of the last meeting.

Reports of committees.

Unfinished business.

Elections.

Miscellaneous business.

2. Special Meetings.

6. Special meetings may be called by the President at his discretion. Upon the written request of three Resident Members of the Society, specifying the object for which the meeting is desired, he shall immediately call such meeting to be held within three days, except when otherwise herein provided.

7. The Secretary shall send to each Resident Member two days' notice of the time, place, and object of each special meeting, and the names of the members requesting the same.

8. At all meetings, stated or special, six Resident Members shall constitute a quorum, except when otherwise herein provided; and all questions shall be determined by a majority of the votes cast, except when otherwise herein provided, each Resident Member being entitled to cast one vote in person.

9. No vote by proxy shall be received.

10. Upon the request of three Resident Members a vote by ballot shall be taken upon any question; otherwise the vote shall be taken *vivâ voce* (except when otherwise herein provided), subject to ordinary parliamentary rules.

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ARTICLE VI.

Officers, Council, and Committees.

1. The officers of the Society shall consist of a President, two Vice-Presidents, a Secretary, a Treasurer, and a Curator; there shall also be a Council and a Publication Committee; all of whom shall be Resident Members of the Society, and shall be elected by ballot at the stated meeting of the Society in January in each year.

2. In the event of a failure to elect at such meeting, the election may be held at a subsequent meeting; and the officers and committees previously chosen, shall continue to hold their offices and perform their duties respectively until their successors shall have been duly elected.

3. Special or standing committees may also be appointed by the Society, whenever it is deemed advisable to do so.

4. Vacancies occurring among the officers, or in any committees, may be filled by the Society at the meeting next succeeding the occurrence of such vacancy, or thereafter.

5. The President shall be the chief executive officer of the Society; he shall preside over and maintain order at all the meetings of the Society and of the Council; shall immediately call special meetings to be held within three days (except when otherwise herein provided), when so requested by three Resident Members in writing, specifying the object for which such meeting is desired; and shall sign all orders on the Treasurer, for money directed by the Society to be paid, and all the certificates of membership.

6. The Vice-Presidents shall, in the order of their seniority, perform the duties of the President in his absence; in the absence of the President and the Vice-Presidents, the Society shall choose a chairman, who shall perform the duties of President *pro tempore.* The Vice-Presidents shall sign all certificates of membership.

7. The Secretary shall have charge of the seal and of all the papers, and conduct all the correspondence of the Society, and exhibit all specimens sent to the Society; he shall take and keep accurate minutes of the proceedings of the Society, Council, and Publication Committee; he shall send notice of his election to each person elected, within ten days thereafter, informing him of the provisions of the fourth section of the second article of these By-Laws, and of the class of membership to which he has been elected; and shall sign and furnish to each member who may apply to him for it, in writing, a certificate of membership, in accordance with article third of these By-Laws; and shall keep an accurate list showing the name and residence of each member, and the date of his elec-

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tion, death, resignation, or loss of membership. He shall, on the Tuesday preceding each stated meeting, send to each Resident Member notice of the time and place thereof, and of the subjects for discussion, the titles of all papers to be read and the nature of any specimens to be presented thereat, and of proposed elections, as required by the second section of the fifth article of these By-Laws; he shall also send to each Resident Member two days' notice of the time, place, and object of each special meeting, and the names of the members requesting the same, as required by the seventh section of the fifth article of these By-Laws; he shall send notice to all Resident Members of the time when the annual dues are payable, in accordance with the third section of the fourth article of these By-Laws; he shall send notices to all officers, councillors, and members of the Publication Committee of their election; and to the chairman of each special committee of his appointment, and furnish him with the names of his associates, a copy of the resolution under which the committee was appointed, and such papers as may be necessary for the performance of its duties. He shall send two days' notice to each member of the Council of its meetings. He shall send all other notices that may be required by the By-Laws, and perform such other duties as may be appropriate to his office, or may be assigned to him by any By-Law, or by any resolution of the Society, Council, or Publication Committee, of which latter he shall, *ex officio*, be a member.

8. The Treasurer shall receive all moneys due to the Society, and disburse them only upon the order of the presiding officer of the meeting at which the account payable shall have been presented and approved. He shall keep full and correct accounts of all moneys received and disbursed by him, and present the same to the Society annually at the stated meeting in December, and at such other times as the Society may require.

9. The Curator shall have charge of the museum and library of the Society; he shall receive such specimens as may be presented to the Society, and make such disposition of them as the Society may direct.

10. The Council shall consist of the President, Vice-Presidents, Secretary, and Treasurer, and four Councillors to be elected by ballot at the stated meeting in January. They shall exercise general supervision over the affairs of the Society, shall consider all such matters as may be referred to them, and shall make such reports thereof to the Society as they may deem expedient. Three members of the Council shall constitute a quorum. They shall keep regular minutes of their proceedings.

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11. The Publication Committee shall consist of the Secretary and four members to be elected by ballot at the stated meeting in January. They shall prepare for publication such portions of the proceedings of the Society as they may deem advisable. Their meetings shall be held subject to the call of the Secretary. They shall determine what shall constitute a quorum, and adopt such rules as to notices and order of business as they may deem advisable.

ARTICLE VII.

Seal.

1. The Society shall have a seal with the following inscription:—

"THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

"*Nec Quærere Nec Spernere Honorem.*"

2. The seal shall remain in the custody of the Secretary, at the hall of the Society, and be affixed by him to the certificates of membership, and to all the official documents of the Society.

ARTICLE VIII.

Notices.

1. All notices required by these By-Laws to be sent, shall be written or printed, and either delivered to the person for whom they are intended, or duly mailed to his post office address as last known to the Secretary.

2. It shall be the duty of every member changing his office or residence to inform the Secretary of his new address within three days thereafter.

ARTICLE IX.

Resignations.

1. Any member not indebted to the Society for dues, may resign upon giving written notice to the Secretary of his intention so to do.

2. No member who is indebted to the Society shall be entitled to resign, except by the unanimous vote of the Society.

ARTICLE X.

Expulsion of Members.

1. If any Resident Member shall, in writing signed by him and delivered to the President, charge any other member with

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having violated the code of ethics, recognized by the College of Physicians of Philadelphia for the conduct of members of the medical profession, or with having been guilty of conduct injurious to the interests or hostile to the objects of the Society, the President shall forthwith submit such charge to the four Councillors, who shall act as a Board of Censors. They shall meet within twenty days thereafter, and shall cause at least ten days' notice of the time and place of their intended meeting to be given to the member preferring the charge and to the member charged, to whom they shall also, upon application, deliver a copy of the charge made.

2. If the Board shall deem the charge sustained, and consider the matter of sufficient importance, they shall submit the same to the Society, together with their written report thereon, at a special meeting to be called by the President (at which twelve Resident Members shall be necessary to constitute a quorum), to be held within sixty days after the presentation of the charges. The Secretary shall, at least ten days before the day fixed for such meeting, send notice of the time, place, and object thereof to the member charged, together with a copy of the charge preferred, of the report of the Board of Censors, and of this By-Law.

3. If the Board shall determine not to submit the charges to the Society, they shall so inform the member preferring the same, who may present the same to the Society at a stated meeting within sixty days thereafter, having first given to the Secretary five days' notice, in writing, of his intention so to do. If two-thirds of the members then present shall be of opinion that the charges ought to be considered by the Society, then the same shall be submitted and acted upon at a special meeting to be called by the President (at which twelve Resident Members shall be necessary to constitute a quorum), notice being given as hereinbefore provided.

4. At the meeting at which such charges shall be considered, a vote shall be taken by ballot, and the member charged may be expelled by a vote of two-thirds of the members present, and shall thereafter cease to be a member of the Society.

ARTICLE XI.

Amendments.

1. No change in or addition to the Constitution or By-Laws shall be made except at a stated meeting, at which at least twelve Resident Members shall be present, nor unless notice of the proposed change or addition shall have been given at a previous stated meeting, and also by the Secretary, to each Resident Member.

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TRANSACTIONS

OF THE

NOTICE.

At the meeting of April 4th, 1878, the following amendment was made to the By Laws.

ARTICLE XI.

Amendments.

I. No change in or addition to the Constitution or By-Laws shall be made except at a stated meeting, at which at least twelve Resident members shall be present, nor unless "said change or addition "shall have been proposed in writing at a previous meeting and "signed by three Resident Members; nor unless by a vote of two-"thirds of the Resident Members present; nor unless every Resi-"dent Member shall have been notified that a change or addition "has been so proposed.

NEW YORK:
WILLIAM WOOD & COMPANY,
27 GREAT JONES STREET.
1873.

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having violated the code of ethics, recognized by the College of Physicians of Philadelphia for the conduct of members of the medical profession, or with having been guilty of conduct injurious to the interests or hostile to the objects of the Society, the President shall forthwith submit such charge to the four Councillors, [redacted] meet within [redacted] days' notice of

thereafter cease to be a member of the Society.

ARTICLE XI.

Amendments.

1. No change in or addition to the Constitution or By-Laws shall be made except at a stated meeting, at which at least twelve Resident Members shall be present, nor unless notice of the proposed change or addition shall have been given at a previous stated meeting, and also by the Secretary, to each Resident Member.

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TRANSACTIONS

OF THE

Philadelphia Obstetrical Society.

VOL. I., 1869–70–71.

Reprinted from The American Journal of Obstetrics.

NEW YORK:
WILLIAM WOOD & COMPANY,
27 GREAT JONES STREET.
1873.

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A CASE OF CHOREA COMPLICATING PREGNANCY.

BY WILLIAM GOODELL, M.D.

Read before the Philadelphia Obstetrical Society, April 7th, 1870.

A. B, at the age of three years, during the dropsy following scarlet fever, was attacked by chorea, which lasted for six years, and then yielded to treatment. At ten, after a great fright, this disease returned for about a year. At thirteen it was again reproduced by fright, and continued until the appearance of the catamenia, in her fifteenth year. When sixteen years old, the shock of her father's sudden death caused a relapse of about three months' duration. In all these attacks the movements ceased during sleep. She was now free from any symptoms of chorea, but not from very severe headaches, which were accompanied by distressing vomitings. Her appetite was voracious, her intellect dull; she became very reticent and solitary in her habits, always laughing in an embarrassed manner when spoken to. At this time she worked in the damp cellar of a confectioner, and there contracted a subacute form of rheumatism—which affected her elbow and ankle joints—and also an intimacy with a young lad of her own age, which resulted in pregnancy. When quickening was first observed she was married to him; but shortly afterwards her old disease returned, increasing daily in severity, and interfering much with her rest at night.

She was admitted into the Preston Retreat on March

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19th, 1870, when nearly eight months advanced, and within a few days of her nineteenth birthday. Her physique was that of an over-grown girl; her color, appetite, and digestion good. Choreic movements limited to the right extremities; facial grimaces constant; occasionally the tongue would protrude for a moment, and then rapidly disappear with an audible cluck. She experienced great difficulty in feeding and dressing herself; locomotion that of a drunken person. The pupils were dilated; conjunctivæ clear and nacreous; intelligence dull. Her pulse was over 100; cardiac impulse strong, but, owing to the constant agitation of her thoracic muscles, no accurate examination of this organ could be made. Urine high-colored, free from albumen, but dense with urates; specific gravity 1029. She was immediately purged, and put on a course of iron, quinia, and bromide of potassium.

March 20th. According to her own account she slept well last night, but her fellow-patients complain of her incessant movements and groanings. They took turns in keeping her covered up, and in preventing her from falling out of bed, which happened several times during the night. Under treatment she improved so rapidly that five days later, on the 24th, she exhibited hardly a trace of choreic movements, even when Dr. A. H. Smith, a stranger to her, saw her at my request; but this, unfortunately, was her best day.

March 25th. The old movements have returned in full force; complains of headache, and excessive muscular soreness, which she attributes to the constant motion. *March 26th.* Rested poorly last night; is no better.

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A cathartic was given, and the bromide increased. *March 27th.* Did not sleep at all last night; had to be held in bed most of the time; movements worse than ever, and now bilateral; articulation jerking. A combination of valerian, morphia, and swt. spts. nitre soothed her for a time. At 1 o'clock P.M. she uttered a wild scream, and immediately began to contort the muscles of the whole body in the wildest manner imaginable. She was incapable of articulating, and seemed unconscious of the presence of even her husband, who soon after came in; yet she always opened her mouth for the medicine, and forced herself to swallow it, although deglutition was very difficult, and attended with such frightful choking spasms as to require three persons to restrain her.

At 4 P.M., observing that the paroxysms increased at regular intervals, I suspected labor, and grasping her tightly about the waist, supported her up three flights of stairs to the delivery-room, she staggering and stumbling all the way like a person excessively drunk. Although she was perfectly conscious, and tried hard to keep quiet, it required the united aid of three persons before I could make a vaginal examination. The cervix uteri was conical and barely admitted the finger, but it was evident labor had commenced with a vertex presentation. At the end of two hours, finding the movements so violent that it was impossible to keep her on the bed, and that the os was dilating very slowly, with great difficulty I put her sufficiently under the influence of ether to introduce the smallest of Barnes' dilators. But, although breathing stertorously,

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so soon as inflation began she commenced the most frightful contortions, which no amount of ether could control. I now sent for my esteemed friend, Dr. A. H. Smith; spread several blankets on the floor, and laid the poor creature upon them; for the exertion of keeping her from falling out of bed was telling on all of us.

She now commenced a series of the most wonderful muscular movements; now nearly striking the nape of her neck with her heels; now almost hitting her chin with her toes; at the same time throwing her arms about in every conceivable manner, and rapidly protruding and withdrawing her tongue, which, however, she never bit. In a position of rigid opisthotonos, she would roll over sideways, or diagonally, sometimes making complete somersets; dashing her head, her arms, her legs first on one wall and then on the other of the narrow room. Three nurses were kept busy in preventing her from injuring herself. During this time she never spoke, but at long intervals uttered a wild scream; yet intelligence was not wanting, for she kept her eyes constantly fixed on me, as if imploring rescue from the clutches of some invisible demon.

At 10 P.M. Dr. Smith arrived, and we immediately decided on hastening delivery. The doctor tried to anæsthetize her, and after a long delay, succeeded in bringing on stertorous breathing. I at once passed up a larger dilator; but, as before, so soon as inflation was resorted to, no amount of ether could control the violent expulsive efforts and general muscular agitation. Chloroform, however, succeeded perfectly, and bi-polar version was rapidly performed, the tough mem-

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branes being subsequently pierced with a pair of scissors.

A premature and badly-nourished infant was soon delivered, which weighed three and a half pounds, and lived for twelve hours.

We now hoped to find our patient quiet, and withheld the chloroform. Again she repeated the same frightful contortions; the pins of the binder were torn out, and although the hemorrhage was not excessive, she soon managed to smear with blood her person, her bed and bedclothes, and the wall, to a height of three feet. Her skin was as dry as parchment, and the surface heat natural, in spite of this excessive exercise. There was nothing like a convulsion in any of these movements; the symptoms pointed to a cerebral rather than to a spinal cause, and yet the brain seemed sane, whilst the muscles were mad. A hypodermic injection of one-sixth grain of morphia, followed soon after by another of one-third of a grain, and that succeeded by twenty grains of the hydrate of chloral, had no effect whatever. Yet she was so far conscious, that when I showed her the child she instantly checked herself for a moment, looked earnestly at it, and very distinctly jerked out, "I did not know it was born;" these were her last intelligible words.

Her pupils becoming contracted, the morphia was not pushed any further; but a drachm of chloroform given by the mouth succeeded in inducing one hour's sleep, out of which she awoke to resume the frenzied movements. Chloral was again tried to the extent of three doses of forty grains each, given in four hours,

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but without any effect; I therefore returned to the inhalation of chloroform. This agent invariably produced sleep, which lasted one hour, when the choreic movements would become as violent as ever. During the twenty-four hours of the 28th inst., from midnight to midnight, she required eighteen inhalations of chloroform, and three hypodermic injections of half a grain of morphia each, to keep her reasonably quiet. Her urine—deep in color, and loaded with urates—was secreted abundantly, and regularly drawn off by the catheter while she was under chloroform. Pulse 145; no cardiac bruits; the impulse strong, and the pitch high. She was so far conscious in her wakeful moments as to open her mouth for her food, but this was not often given, as the act of deglutition nearly choked her.

By 10 A.M. of the 29th inst. she had inhaled the chloroform eleven times more, and had received one hypodermic of half a grain of morphia. Her pupils were somewhat contracted; there was a rigidity of the right arm and leg; pulse, 160; breathing, labored. During each inspiration the pulse would be lost at the wrists, but not in the lower extremities; showing, I think, a spastic contraction of the scaleni muscles, by which the subclavian arteries were probably forcibly compressed.

One-fiftieth of a grain of atropia was now injected under the skin; this rapidly produced suffusion of the surface, and, after the lapse of an hour, full dilatation of the pupils. At noon she became comatose, lying quite still and breathing stertorously; in this condition

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she lingered until 11 P.M., when she died without a struggle.

Shortly afterwards the skin assumed a bluish tinge from capillary engorgement; whilst, four days afterwards—as her friends subsequently informed me—the body was livid with the bruises and abrasions she had received during the period of excitement. An autopsy was unfortunately not obtained, so that no light can be thrown upon the nature and situation of the nerve lesions.

Remarks. I have been thus minute in describing this case, because chorea in the pregnant female is a very rare disease, and is not included by obstetrical writers among the dangerous complications of gestation or of labor. Dr. Barnes (*London Obstet. Trans.*, vol. x., p. 147), who is the most recent writer upon this subject, has collected but fifty-six examples, of which so large a number as eighteen terminated fatally. Even in cases where the choreic movements were slight, and the disease seemed mild, grave symptoms would suddenly set in—especially during the time of labor—and the patient usually died, either exhausted by the incessant muscular frenzy, or else hemiplegic from some lesion of the nerve-centres. The important question therefore arises, whether the induction of premature labor would not be the best course to pursue under such circumstances. Indeed, in view of the facts that premature labor and abortion usually occur spontaneously in this disease, and that the children usually perish, it would seem more prudent to induce abortion at the earliest period consistent with safety, and at once remove the chief cause of irritation,

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before the nerve-centres shall have received any grave lesion. Dr. Barnes is disposed to attribute this tendency to abortion to the accumulation of carbonic acid in the blood, through disturbance of the respiratory function; to the exhaustion of the *vis nervosa*, and to impaired nutrition. These agents no doubt have their weight; but I suspect this tendency to provoke abortion is due in a great measure to the mechanical irritation arising from the incessant muscular movements. Certainly, even a healthy pregnant woman, to be artificially exposed to a tithe of the muscular movements, and consequent agitation and succussion, both of the uterine walls and of the ovum, obtaining in chorea, it would be a matter of surprise did she not abort.

In many of the cases collected by Dr. Barnes, anodynes had no effect in calming the violence of the movements, and, indeed, seemed to aggravate these formidable symptoms. Chloroform, however, as in my own case, acted much better, and should not therefore be neglected. I am at a loss to explain the absolute inertness of the large doses of chloral administered to my patient, especially if, according to some writers, the effects of this drug are due to the liberation of chloroform in the system.

It has been remarked, both in puerperal and non-puerperal chorea, that the urine is unusually dense with urates and phosphates. The presence of the latter is due to nerve waste, whilst the excess of urea has hitherto been attributed to waste of muscular tissue. More recent investigations, however, cast doubts upon the correctness of this explanation, as regards the presence

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of the urates in the urine (*Lond. Obstet. Trans.*, vol. x., p. 168). But if these urates be not due to waste of muscle, there must then be an important significance in the fact, that puerperal eclampsia and puerperal chorea present conditions of the urine precisely opposite to each other.

The theories with regard to the nature of this remarkable disease are so far unsatisfactory, that they do not naturally accommodate themselves to all the phenomena. It has been remarked by many eminent observers (*Vide* article Chorea in Diseases of Children, by Meigs and Pepper) that chorea and rheumatism are frequently associated together; and this fact, together with the frequent discovery of minute bead-like vegetations fringing the borders of the mitral valve and of its leaflets, has given rise to the theory of embolism as a cause. In other words, that chorea depends on the plugging up of the small arterial branches supplying sensori-motor ganglia, thereby interfering with their perfect nutrition. But may not the intercurrent rheumatism, so frequently observed in chorea, be nothing more than the inflammation of joints and muscles produced by the excessive fatigue arising from the constant movements?

Per contra, the opponents to the embolic theory—among whom Vogel, Barnes, and Ogle stand prominent—contend (a) That since these vegetations are so minute, and so slightly adherent as to be detached by a camel's-hair brush, they are mere blood fibrin deposited during the agony of dissolution. (b) That the unilateral character of this disease, and its usual termination in recovery,

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militate against this theory. (c) That if rheumatic embolism were the cause, chorea should not so commonly be a disease of childhood, and of females. (d) That since the most frequent exciting cause is that of sudden terror, how can an emotion produce embolism? (e) That the spanæmic condition of choreic patients; the happy influence of the appearance of the menses, as in chlorosis; the contrary effect produced by pregnancy, when the albuminous basis of the blood constituents is below par, all point to impaired nutrition as a cause, rather than to embolism. Finally, that, in the present state of our knowledge, the most natural explanation is this: that the choreic movements are reflex phenomena, due to impaired nutrition of nerve-centres from impoverished blood; that the disturbance is at first merely functional, but may ultimately develop into organic lesions of the nerve-centres through the effect of prolonged irritation and shock.

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

REPORTED BY GEORGE PEPPER, M.D., SECRETARY.

MEETING OF DECEMBER 2D, 1869. DR. HARRIS IN THE CHAIR.

ERECTILE CANCROID OF THE VAGINA.

DR. GOODELL related the following case:—A robust lady, who had a dark and livid tumor projecting slightly from the vulva, from which she had never suffered any pain or inconvenience. Hemorrhage setting in, her physician called Dr. G. in consultation. He found a smooth vascular tumor, originating one inch below the meatus urethræ, as large as a horse-chestnut, giving out a profuse hemorrhage in minute jets, from an apparently ulcerated surface. As ice, liq. ferri subsulph., and other styptics had failed, a double ligature was thrown round the mass. The hemorrhage was thus arrested, and as, from its unusual site, it was considered a benign erectile tumor, a favorable prognosis was given. The growth, however, soon increased so rapidly as to fill up the vagina, and the lady died one month afterwards, exhausted by repeated hemorrhages. An autopsy revealed a large cauliflower excrescence, springing from the anterior wall of the vagina, which showed under the microscope the characteristic cells of such growths. The womb, bladder, and rectum exhibited no trace of the disease, and all the other internal organs were healthy. Dr. G. said that the early diagnosis of a cauliflower excrescence is extremely difficult, owing to its resemblance to an erectile growth; indeed, Virchow asserts that the excrescence is at first a simple papillary tumor, which ultimately passes into the cancroid state; and that therefore all vascular tumors of the vagina and uterus should be looked upon with suspicion.

Other members related their experience in regard to these cancroids, but had never seen one occupying the above site.

CASE OF PREMATURE LABOR.

DR. PEPPER related a case of a primipara, six months advanced, who fell into labor after a fall. The child presented by the breech, and for nearly an hour after the body was in the vagina, the head was grasped by the os uteri.

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All pulsation in the cord being arrested, traction was made on the legs, and after considerable delay a premature and apparently dead fœtus was extracted. Some time afterwards he was attracted by a feeble effort at respiration, and found the child breathing. The respirations were feeble—two or three to the minute; the pulsation of the heart rapid, and very faint. It was wrapped up and placed under the stove, where it continued to gasp for forty hours; no attempt at deglutition could be induced, although faithfully persevered in.

Dr. D. M. Cheston related the history of a breech case, where, after a normal labor, the child was born apparently dead, and it was only after very prolonged efforts that respiration could be established.

Dr. De Forrest Willard related a case in which a five and a half months fœtus continued to have respiratory movements for over two hours.

Dr. Robert Harris asked if the opinion of the Society was favorable as to development subsequent to birth, and entirely supplementing to the loss of a portion of intra-uterine life.

A discussion arose, in which it appeared that the child was considered to be perfectly capable of replacing its lost uterine life; many cases in point being given to prove this fact.

Meeting of February 3d, 1870. Dr. A. H. Smith in the Chair.

PROLAPSE OF ARM AND FUNIS.

Dr. A. H. Fish stated that he was called in by a midwife to see a woman in her eighth pregnancy, who had been in active labor for twenty-four hours. The left arm and a loop of the cord had descended in front of the head. No pulsation could be detected in it, but he tried unsuccessfully to replace it by the postural method. He therefore carried up the arm and hand, applied the forceps at the superior strait, and speedily delivered her of a large still-born child.

PLACENTA PRÆVIA.

Dr. Fish also related the history of a case of placenta prævia. A primipara, seven months advanced, after a long walk, retired to bed. At midnight she was awakened by a sharp pain, and found herself losing blood very rapidly; about one quart before the doctor could reach her. He immediately passed up his finger, which the os barely admitted, and found a central implantation of the placenta. Calling in Dr. Goodell, anæsthesia was induced, on account of the excessive restlessness of the woman, and the three sizes of Barnes' dilators were successively intro-

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duced. Their presence controlled the hemorrhage, but the very rigid and conical cervix uteri could not be dilated so as to admit the hand. Two fingers were therefore introduced, and a very large portion of the placenta removed. The head was in the first position of the vertex, but did not offer to engage. Ergot was therefore given, which forced the head upon the os, and plugged it firmly. There was no further hemorrhage; but as the woman became very exhausted and restless, whilst the os still continued rigid, the child's head was perforated, and delivered in a few minutes. The woman did very well until the fourth day, when symptoms of metro-peritonitis set in, of which disease she sank on the seventh day.

DR. GOODELL remarked that he had never seen so rigid a condition of the os uteri, and likened it to the edge of the falciform process of the dura mater in a dried preparation, but somewhat thicker to the touch.

DR. A. H. SMITH asked if bipolar version had been attempted.

DR. FISH replied that it had been tried without success.

INCISION OF RIGID OS.

DR. J. PACKARD asked whether the opinion of the Society was favorable to the operation of nicking the os uteri when unyielding.

DR. GOODELL replied that there seemed to him to be two answers to this question. The normal process of parturition is frequently accomplished by lacerations of the os uteri, and we can with reason follow this teaching in some rare cases of dystocia arising from simple rigidity, or from that dependent upon alteration of structure, as in cases of previous inflammation of the cervix, or in cases of procidentia, in which the cervix usually becomes dense through exposure to the atmosphere. But in cases of central implantation of the placenta over the os uteri the cervix becomes so exceedingly vascular that the operation of nicking its edges would seem to him hazardous; not only from hemorrhage, but more especially from the risk of septicæmia, as all the lochial discharges would have to pass over the raw surfaces made in this highly absorbent tissue.

DR. PACKARD believed that a number of slight incisions at equal distances around the circumference of the rigid os, even in placenta prævia, could not materially increase the danger, as the hemorrhage could be controlled by styptics. He also inquired if the use of ergot was not a dangerous remedy in rigid os.

DR. GOODELL replied that he was very much opposed to the administration of ergot previous to the birth of the child; but that, in the present case, knowing that the pelvis was capacious

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and the child immature, he thought that increased expulsive efforts would not only firmly plug the bleeding surface, but hasten dilatation. He also stated that he had very recently heard of a case of central implantation in which the attending physician peeled off the placenta as far as his finger could reach, and then injected a sol. of the subsulphate of iron, with the effect of arresting the hemorrhage, and of permitting a natural delivery.

Dr. A. H. Smith stated that in all the cases he had seen he had readily dilated the os, separated the placenta, applied the forceps, and had been fortunately successful in delivering his patients safely. He alluded to the operation proposed by Dr. Packard, and said that he had always dreaded it, partly for the reasons assigned by Dr. Goodell, and more particularly because he feared the nick might tear into the body of the uterus. Living tissue, so long as intact, is capable of immense distention, but when once there is a solution of continuity, no foresight can tell where the laceration will stop.

Dr. E. Wallace alluded to a case in which he found the woman almost pulseless, and the os very slightly dilated. The vagina was carefully packed with sponges, and the patient stimulated and well fed. She gradually rallied, and after several hours the pains returned and forced the tampon out of the vulva. The placenta was immediately separated from the cervix, and a still child delivered by version. The mother did well, not having lost more than eight ounces after the introduction of the tampon. Another analogous case was related. Dr. W. has never seen severe hemorrhage after the introduction of the tampon; has never lost a mother, nor saved a child.

CASE OF PROLAPSE OF FUNIS.

Dr. Goodell spoke of a primipara recently under his care at the Preston Retreat. She had fallen down two flights of stairs in the seventh month of pregnancy, and remained unconscious fifteen days, after which she slowly recovered, with permanent dilatation of the pupils, a peculiar cast in the eye, and very imperfect vision. She complained so much of head symptoms and vertigo, in spite of treatment, that he looked forward with dread to her labor. Her urine presented traces of albumen. The first stage of labor was short, and the head soon engaged in the first position of the vertex, but was arrested at the inferior strait. She now complained so much of the pain in her head, and became so restless, that, apprehensive of a convulsion, he at once gave ether, and proceeded to apply the forceps. The first blade slipped on easily enough, but the second seemed to hit something

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soft and yielding in the way, which he could not reach with his finger; he was therefore obliged to withdraw it, and introduce it in a different direction before the lock could be adjusted. After the head had been brought down upon a dense perinæum the forceps were removed, in order to allow the case to terminate spontaneously; but upon withdrawing the second blade a long loop of the cord was drawn down with it. The forceps were immediately re-applied, and the delivery forced. The child was still, and the perinæum badly lacerated, but three deep wire sutures, introduced at once, caused perfect union in one week's time. Dr. G. asked the Society whether the forced delivery, under the circumstances, was not justifiable.

DRS. WALLACE, A. H. SMITH and others justified the measure, as affording the only chance for saving the life of the child.

CASE OF HYSTERICAL DYSPHAGIA.

DR. GEORGE PEPPER stated the following case:—A single woman, aged 45, had not menstruated for several months. About Christmas last was seized with sore throat, cough, and great difficulty in deglutition. She sought advice, and for the ensuing six weeks had her fauces swabbed out daily with a solution of nit. argent. The trouble rather increased; she lost flesh and strength; even liquids were swallowed with difficulty, and on no occasion was she able to take solid food. At this time Dr. P. was called in to see her, and, after very carefully investigating her case, suspected uterine trouble. On vaginal examination he found the hymen intact, vagina narrow and sensitive, uterus small, very sensitive, and anteverted; os patulous, and a glairy discharge from the cavity. On passing the sound it was arrested at about one and a half inches. Argent. nit. was very thoroughly applied, and although it caused considerable backache, ovarian pain, etc., yet from that moment his patient was cured of dysphagia, and that evening she ate a hearty supper. She was ordered the bromide of potassium, gr. xxx. t. d. for some days, and is now perfectly well.

CASE OF DIFFICULT LABOR.

DR. WALLACE related a case that occurred in his consulting practice. The head had been wedged in the pelvis for many hours, the face presenting, with the forehead to the pubis. Forceps had been applied and reapplied, but always slipped off. Dr. W. applied a heavy, unyielding pair, but could not move the head; he therefore perforated, introduced his hand, grasped and crushed the head, removing it without any difficulty after a cord had been passed under the chin by one of

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the attending physicians, by which traction was made. The woman recovered very unsatisfactorily; had intense pelvic pain; offensive lochia, dreadful pain in urination and defecation, so that she was partially etherized before each evacuation. Dr. W. saw her again after the lapse of six weeks, and found, upon examination, that the vaginal portion of the cervix uteri had sloughed off, leaving a mere pin-hole of an os; that the tuberosity of the left ischium had been laid bare, and that a dense cicatricial band had formed on the left side of the vagina, diminishing its calibre. The uterus was in a condition of sub-involution and completely retroverted. Dr. W. advised the use of very large rectal injections, while the patient was placed upon her knees and chest. This procedure immediately relieved the displacement, and she had no further trouble in defecation. She ultimately regained her health completely, and the Doctor did not see her again until a few weeks since, when he was called in consultation for a third time. She was again in labor, but he experienced great difficulty in finding the os, which was high up and far back in the pelvis. The cicatricial band across the vagina was very dense and firm, and it waswith reference to the advisability of cutting it across that he had been called in. It was decided to wait until the child reached the obstruction; slowly the os dilated, and the breech presented, engaged, and descended. The cicatricial tissue yielded, and softened down under its pressure until it could hardly be detected. The body of the child soon followed, and but for a temporary arrest of the head at the superior strait, no difficulty would have been experienced. From the experience gained in this and in other cases, Dr. W. advised a reasonable delay before resorting to the knife, as he believed that the normal process of dilatation was ordinarily capable of softening down the most unyielding tissues.

Meeting of March 3d, 1870. Dr. Packard in the Chair.

CASE OF VAGINISMUS.

Dr. Pepper related the following case:—Æt. 20; nervous temperament; healthy parentage; in poor health for two years back; dull, depressed, irritable, and at times very easily excited; constant cervical and occipital headache, and dull, ill-defined lumbo-sacral aches. No vesical or rectal disturbance, nor leucorrhœal discharge. Became engaged to be married about a year ago, and almost immediately lapsed into a highly hysterical and irrational state; crying and pouting over even the utmost devotion of her lover; often remaining for days in a condition of pseudo-narcotism, only occasionally arousing

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herself up to complain of headache. She was humored to the last degree by her friends and betrothed; and being considered by her physician to be suffering from malarial poison, was dosed with tonics, quinia, iron, cod-liver oil, and alcohol. Constantly losing flesh, and assuming a marked chlorotic appearance; always worse at the menstrual period. Was married last autumn; but, on attempting marital intercourse, her husband found that the slightest touch was followed by violent spasm of the sphincter vaginæ, intense pain, and hysterical crying which lasted one or two hours. After two or three attempts they were compelled to live a non-sexual life, although both had unusually violent animal passions. After three months of such an existence Dr. P. was called in. He found the menstruation regular and painless; no rectal or vesical disturbance; no vaginal discharge, but a return of all the old distressing chlorotic symptoms described above. At first Dr. P. advised warm hip-baths, unloading the bowels, and the use of vaginal suppositories of opium and belladonna to alleviate the pain. But no result was produced; the suppositories were imperfectly introduced, as this caused as much pain as the act of copulation. An examination was now made under ether; the parts were small, but well formed; the hymen intensely red, circular, fleshy, and with a minute central opening. On forcing the finger through this opening the cervix was felt low down, large and spongy; the os patulous and surrounded by granulations. The hymen was forcibly lacerated, and the sphincter vaginæ paralyzed by violent stretching. Smith's base-expanding bivalve speculum was introduced, and widely distended; the cervix was found covered with raspberry-like granulations; the canal patulous, and freely discharging a gelatinous mucus.

Sound entered just one and a half inch. After wiping out the cavity of the cervix, argent. nitras was thoroughly applied to the granulations, external and internal, and to the remains of the hymen. A small pledget of greased lint was left in the vaginal orifice, and one grain ext. opii aquos. introduced into the rectum before the effect of the ether was allowed to pass off. She had slight soreness next day, but Dr. P. was able to pass, without much difficulty, the middle size of Barnes's dilators, roughly smeared with ext. belladonnæ; this was inflated and left in situ for two hours. For a week, on every succeeding day, this dilatation was carried out; at the end of which time a Cusco speculum was introduced and the diseased surface thoroughly cauterized. From the commencement of this local treatment the improvement was most marked; and although she

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had occasional relapses of the old nervous disturbance, the vaginismus never returned, and she is now quite well.

Dr. John H. Packard then made some remarks upon the

DIVISION OF THE INTERNAL OS IN CERTAIN FORMS OF DYSMENORRHŒA.

He had never operated in any cases but those free from uterine disease, as proved by the freedom from all symptoms during the intermenstrual periods, the narrowing of the internal os being the only abnormal condition present. The dysmenorrhœa in all these cases was of a pure mechanical type, labor-like until the flow was fairly established. He used from preference the Ferguson cylindrical speculum, Agnew's hysterotome, the uterine sound and tenaculum, and also sponge-tents. The cervix being exposed, the anterior lip seized by the tenaculum, the sound is then passed to ascertain the direction of the canal, followed by the hysterotome, so arranged that, when the blades are sprung, the tissues will be cut to the extent desired. A sponge-tent is now passed up, and the patient put to bed. He always visits his patient again in six hours, although the tent may be left in for eighteen or twenty-four hours. Next day the speculum is again introduced, the tent removed, and a larger one inserted if deemed necessary. He operates in this manner without hesitation or fear, as no bad consequences have ensued. His patients have all been completely relieved, and, although several months have elapsed since the operation, have experienced no return of the dysmenorrhœa.

Dr. G. Pepper made some remarks on the closure of the *os internum* being its normal condition of health, especially in nulliparæ; and thought that when patulous it indicated disease of the uterine cavity. He believed that, as a rule, when so large an instrument as Agnew's hysterotome could be passed, very little obstruction could exist to the escape of the menstrual blood. He also thought that many so-called cases of mechanical dysmenorrhœa, supposed to have been relieved by incision, were really instances of endocervical catarrh cured by the local depletion and by the pressure from the sponge-tents.

Dr. J. G. Allen questioned the advantage derived from the bilateral incision, and was inclined to second Dr. Pepper's remarks. He spoke on the use of sponge-tents, said that he believed serious and dangerous symptoms might be produced by their use, even when rendered disinfectant by potass. permang., carbolic acid, etc., which were in too small quantities to be of

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much service, and were soon neutralized. Sponge-tents were open to grave objections, from the decomposition of blood and other discharges in their interstices; he therefore never allowed them to remain in position over twelve hours, and advocated even an earlier removal.

Dr. E. L. Duer stated that he had little or no experience in such cases as Dr. Packard had related, but he had often practised the antero-posterior incision in certain cases of flexion; the method being that advocated by Sims, of New York. He said that he now dispensed with the use of the speculum or of any other instrument in passing up a sponge-tent, by using his left index finger as a guide to the os, and sliding the tent along its palmar surface, with the index finger of the right hand.

Meeting of April 7th, 1870. Dr. F. G. Smith in the Chair.

PUERPERAL CHOREA.

Dr. Wm. Goodell read the history of a case of puerperal chorea, with remarks upon the nature of this rare disease.

Dr. F. G. Smith asked the mental condition of the patient before the last violent attack.

Dr. Goodell replied that she was far from bright, and had the peculiar soft and dreamy eye so common in persons of feeble intellect.

Dr. A. H. Smith stated that he had never seen so painful a case before. It exceeded in violence any hysterical attack, or any case of puerperal convulsions he had ever witnessed. What was still more painful, was the entire consciousness of the girl, and the piteous, appealing look for relief that she constantly cast upon her medical attendants.

Dr. Goodell enlarged upon the condition of the urine, the absence of albumen, and the excess of urates, just the reverse of the condition of the urine in eclampsia, which is also a disease producing violent muscular movements.

Dr. F. G. Smith thought that, in the present state of our knowledge, we must attribute the presence of the urates in choreic urine to the waste arising from excessive muscular action.

Dr. Packard drew attention to the fact that the absence of surface heat and of perspiration in this case, would seem to indicate that there could not be such a waste of tissue and of vital force in automatic as in voluntary muscular movements.

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MEETING OF MAY 5TH, 1870. DR. HARRIS IN THE CHAIR.

CASE OF PUERPERAL FEVER.

DR. EDW L. DUER related the history of a case of puerperal fever which had terminated fatally, under his care, in the Philadelphia Hospital. The patient, a primipara, had well-marked albuminuria, and during the labor slight eclampsia, which yielded readily to small bleedings and bromide of potass. She died a few days after delivery, of pulmonary congestion, having developed all the symptoms of pyæmic peritonitis. On *post-mortem* examination all the viscera were found intensely congested, the lungs collapsed, the heart contracted, and containing a large, firm *ante-mortem* clot. There were evidences of peritonitis, chiefly confined to the pelvic cavity, the bladder was coated with lymph, and a number of small abscesses were found in the walls of the uterus.

DR. WILLIAM GOODELL showed an instrument he had devised for the introduction of "Barnes's Dilators," which was something like the ordinary gullet forceps.

SPONTANEOUS AMPUTATION IN UTERO.

DR. GEORGE PEPPER related the history of a case of spontaneous amputation of the right arm in utero. The child was a well-developed female in other respects, weighed nine and one-quarter pounds, and seemed strong and well. The arm had been removed at about three-quarters of an inch below the elbow; the stump was rounded and well covered, and presented two small depressed cicatrices. The bones could be distinctly traced and were nicely rounded off. No trace of the hand and arm could be found, though very carefully and thoroughly searched for. The umbilical cord was of normal length and appearance, and there were no fibrous bands or shreds attached to the amnion.

DR. J. F. WILSON had seen a case about nine months since where the right arm was removed at the junction of the lower and upper two-thirds. No trace of the limb could be detected.

DR. ROBERT P. HARRIS had seen several cases where the limb was not developed, and in all the cases there had been rudimentary fingers or toes.

HEMORRHAGE FROM THE UMBILICAL CORD.

DR. GEORGE PEPPER related the history of a case of hemorrhage from the free extremity of the umbilical cord. The child was a very fine, large male, eleven and one-quarter pounds

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in weight. The cord was cut, stripped up, and tied in the ordinary way with two ligatures. The child was then carefully wrapped up and placed on the floor. After about half an hour, Dr. Pepper's attention having been given to the woman, he noticed that blood was escaping from the blanket in which the child was wrapped. The covering was removed, and everything around the child was found saturated with blood, which was still escaping from the cut extremity of the cord. The ligatures were removed and reapplied very firmly; the child was considerably depressed, but soon rallied. After about five hours he was again summoned, and on reaching the house found that hemorrhage had taken place from the free extremity of the cord; the amount, however, was not very great; the ligatures were again removed and reapplied; four or five hours later hemorrhage set in for the third time; on this occasion additional ligatures were thrown around the cord, and the dressing filled with tannic acid; no further bleeding took place. The child subsequently did very well, the cord falling off normally about the sixth day.

Dr. Goodell remarked that Dr. Pepper's case was to him unique, for in his own practice a third ligature had never been necessary, although a second one had sometimes been required, until he had adopted the following modification of Dr. A. F. A. King's method for the management of the cord: So soon as the child cried lustily, or freely respired, he cut the still pulsating cord of the usual length, and after grasping it firmly at the umbilicus with the thumb and index finger of the left hand, to prevent it from being torn out, proceeded to "strip" it with the thumb and forefinger of the right hand, in order to squeeze out of it all the blood and as much as possible of the gelatin of Wharton. If the cord were lobulated with blisters of this gelatin, each one was nicked with the scissors and emptied. The compression at the umbilicus was now for a little while dispensed with, in order to allow the internal portion of the vessels to collapse, and then a second instalment of "stripping" was resorted to. When all hemorrhage had ceased—which was invariably the case after this manipulation—and the cord had become perfectly flaccid, it was tied in the usual manner. But neither binder nor greased or scorched rag, nor any dressing of any kind whatever was afterwards used, the cord being left to dangle about freely. He—Dr. Goodell—claimed for this method, that the cord dried up without any bad smell, or process of putrefaction, and fell off like a ripe fruit without leaving a raw stump. He stated that formerly two astringent lotions of tannin and zinc were kept at the Preston Retreat,

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which were in constant demand for the sore navels; but that, since adopting this new method, out of more than two hundred infants not a *single one* had had a pouting, angry-looking, or purulent umbilicus; nor had any one suffered from fungoid vegetations or umbilical hernia. That, since anatomists had pointed out the existence of muscular fibre in the cord, he believed its ligation to be unnecessary; for if hemorrhage did not take place immediately after cutting and "stripping" it, it was very unlikely to occur at a later period. That he had once successfully dispensed with the ligature, but had suffered so much anxiety of mind lest a regurgitation of blood should occur during his absence, that he had ever since invariably applied it, although he was ashamed of this cowardice, and considered it the result of early prejudice. That the fact of a second, and even third ligature being occasionally required to arrest subsequent hemorrhage—as in Dr. Pepper's typical case—so far from being an argument in favor of ligation, was to him rather an argument against its use. For, if the cord were tied before being thoroughly emptied, and allowed to collapse, the blood imprisoned in it by the knot, being out of the circulation, would not only keep the vessels patulous, but would also necessarily undergo a process of putrefaction.

Dr. Duer stated that he had been induced by Dr. Goodell to try this method in a case occurring in his own private practice which they saw together, and so gratified was he with the result that he was now introducing it in the lying-in wards of the Philadelphia Hospital.

Meeting of June 2d, 1870.

ABORTION WITH RETAINED PLACENTA.

Dr. Robert P. Harris said that he had recently been called to attend a lady in her second pregnancy. She fell in premature labor at about the eighth month, in spite of every effort at prevention. After the fœtus was expelled the uterus failed to contract, and after waiting for some time for the spontaneous expulsion of the secundines, Dr. Harris passed his hand into the uterus and found the placenta firmly adherent around the right cornu, while the uterine tissue at this point was perfectly flaccid and relaxed. A portion of the amniotic sac had become inverted, forming a large pocket in which a mass of coagulated blood was contained, thus giving rise to much the appearance of a large polypus. Dr. H. readily removed the coagula, and afterwards the placenta. He only alluded to the case as presenting interesting points in relation to diagnosis.

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Dr. Wm. Goodell, in commenting upon the case, said that he could explain it in no other way than by supposing that the membranes had formed abnormal adhesions to the uterine walls. This condition he believed was much more common than was generally received, and in this way he explained those cases where the placenta was inverted and the membranes torn cleanly off, and subsequently removed with very great difficulty. Dr. Goodell believed that those delicate adhesions existed as a normal condition, and it was by their abnormal development that such cases as the above were produced. He also thought that these adhesions might become abnormally developed as the result of inflammatory disease around blood clots, or from the failure to separate of some of the natural submucous adhesions when the decidua vera atrophied and became continuous with the decidua reflexa. Other members made remarks on the subject substantially to the same effect.

DYSMENORRHŒA INDUCED BY A PESSARY.

Dr. Robt. P. Harris related the history of a case which he had received by letter from a medical friend. A young girl who had suffered from profuse menorrhagia, unaccompanied by pain or other evidence of uterine disease, had, for some uterine malposition, a pessary introduced. The succeeding menstrual periods became exceedingly painful,—the pain and disturbance subsiding, however, upon the removal of the instrument. The dysmenorrhœa induced was of the mechanical expulsive character.

Dr. Harris believed that the symptoms arose from the posterior bar of the instrument (a Hodge pessary) pressing upon the os uteri, thus occluding the calibre of the canal.

Dr. G. Pepper had seen much the same train of symptoms induced as well by the introduction as the withdrawal of pessaries, and in certain cases was inclined to attribute the suffering experienced to the altered position and circulation of the uterus, and could scarcely believe that an instrument exercising sufficient pressure to close the cervical canal or os uteri externum could be worn in the intermenstrual periods without any evidence of disturbance.

Dr. F. G. Smith had noticed the same condition particularly well marked in a case recently under his care.

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MEETING OF JULY 7, 1870. DR. F. G. SMITH IN THE CHAIR.

ENCEPHALOID DISEASE OF THE LEFT KIDNEY IN A CHILD.

DR. ALBERT H. SMITH presented a specimen of encephaloid disease of the left kidney of a child 3½ years old, and related the following history:— ——; male, æt. 3½; no history of malignant disease in family. Before reaching the age of 18 months, he had passed through all the ordinary diseases of childhood in an unusually severe form. The last was scarlatina, followed by albuminuria and dropsy, but it resulted, as all the other conditions had, in restoration to perfect health. He was, when 18 months old, vigorous, active, and unusually intelligent. Dr. Smith was consulted on September 16, 1869. The child had been fretful, feverish, and restless the previous day, had complained of painful micturition, and had passed "pure blood." In addition there were slight œdema of the eyelids, frequent pulse, and scanty and deeply stained urine, the latter containing a large amount of albumen, blood corpuscles, and urates. The symptoms abated rapidly, the urine became normal, and on the fourth day the child was playful and apparently well, with the exception of sudden attacks of violent crying, apparently causeless. Dr. Smith did not see him again until December 23d, when a violent convulsion came on very suddenly and unexpectedly. The attack had passed off before the doctor reached him, but while putting him in a hot bath his mother had discovered a swelling in the abdomen. Upon examination a circumscribed spot of redness about two inches in diameter was detected in the left iliac region; at first no prominence was apparent, but tension of the abdominal walls developed a tumor resembling the smaller end of an egg, seated in the left iliac fossa, two inches above Poupart's ligament, and about the same distance from the anterior superior spine of the ilium. As pressure upon it produced apparent pain, and as the child was irritable and restless, no further examination was made, but on the following day, the redness and tenderness having disappeared, a careful exploration was made. The mass already spoken of was found to be merely the lower extremity of a firm, inelastic, painless growth which extended obliquely upwards and backwards, at first easily traced, but becoming more obscure as it passed towards the left lumbar region. The mass was slightly movable and of an elongated cylindrical outline, not unlike a banana in size and shape. The colon was pushed in front and to the right. There was no prominence in the loins and no increased area of renal percussion dulness.

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In a few days the child became again bright and lively, and continued so throughout January and February. No marked increase in the growth took place, there was no emaciation, and with the exception of occasional sharp attacks of pain in the abdomen, of short duration and not occurring oftener than three or four days, his general health seemed perfect. During this time the urine was repeatedly examined by Dr. James Tyson, and, with the exception of a trace of albumen in one specimen, nothing abnormal was noticed. In the latter part of February without any apparent dyscrasia the tumor began to increase, and advanced slowly but steadily until about the 1st of April, when rapid emaciation commenced and the mass became very tender, and the seat of violent, agonizing pains; hectic irritation also supervened, and every thing seemed to betoken a speedy fatal termination. On April 14th Dr. G. Pepper saw the case with Dr. Smith; the tumor occupied almost the whole left half of the abdomen, causing a marked prominence from the crista ilii to the lower margin of the ribs and extending around into the lumbar region. No increase downward could be detected, while the upper portion of the mass had passed beneath the margins of the ribs and extended anteriorly to the median line. The percussion note over this entire area was perfectly flat, the colon being pushed over to the right, the dulness decreased postero-laterally, and again increased over the splenic region. The surface of the mass was smooth, free from nodulations, and presented a vertical depression about its middle which divided it into two lobes. There was no tenderness upon pressure and no sense of fluctuation could be detected. The superficial abdominal veins were largely developed. The mass continued to enlarge rapidly, especially the lower portion, which became the most prominent part, while the depression on its surface became more marked. The paroxysms of pain increased in frequency, though in their absence he seemed quite bright and his appetite and digestion were good. Constipation now became decided but not obstructive. The greatest inconvenience was from the weight of the abdominal mass causing some disability in walking. About the 1st of June symptoms of prostration and extreme dyspnœa set in, accompanied by excessive emaciation. On the 4th of the month, the symptoms still increasing, Dr. Pepper again saw the case with Dr. Smith. An apparent sense of fluctuation gave rise to the hope that the removal of fluid, should any be found to exist, might lessen the sufferings from pressure, and on the following day Dr. W. Pepper saw the case with them. The child being thoroughly etherized, an exploring trocar was plunged into the most prominent portion

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of the mass but no fluid escaped. The point of puncture was acutely painful the next day, but anodynes gave prompt relief. He continued to sink until the 14th, when he died. The urine flowed freely until the 12th when total suppression occurred; before death a considerable quantity of blood was voided from the bladder. Slight œdema of the left leg was present for a few days before death. The duration of the disease from the first attack of hæmaturia was nine months; from the first discovery of the tumor, about six.

The autopsy was made twenty-four hours after death by Dr. W. Pepper, who furnished the following notes of the naked eye and microscopic appearances:—

The right kidney was hypertrophied to a moderate degree, weighing 2¾ ozs.; its tissue presented normal appearances.

The left kidney occupied the entire left side of the abdomen; the intestines being pushed over to the right side. The descending colon was quite tightly adherent to its inner aspect, but the walls of the bowels were healthy, and their calibre not permanently obstructed. The adhesions which bound the kidney to its place were unusually dense and strong, but there were no adhesions between its capsule and the anterior wall of the abdomen. The kidney was enormously enlarged, weighing 3½ lbs., and presented a nodulated exterior. The capsule was thickened, and tensely filled by the contained mass, which imparted a sense of elastic vibration. Upon section, the normal appearances of renal tissue were entirely absent, the mass presenting throughout typical encephaloid characters. The section was generally of a whitish-gray color, mottled with patches of pink and red of various shades, and, in one or two places, presented effusions of blood. All parts of the cut surface exuded abundant cancer-juice on pressure. Microscopic examination showed an entire absence of the elements of renal tissue, the mass being composed of very numerous nucleated cells, with a scanty stroma of small fusiform cells. The majority of the cells were about the size of a white blood-corpuscle, rounded or oval in shape, and containing one, or, in a few instances, two nuclei. A few cells were seen which were larger than the above, and contained multiple nuclei. Many of them presented highly granular contents, and the tissue also contained free oil in granules or small globules, and some crystals of cholesterine. The upper part of the ureter was much enlarged, its walls thickened and rigid, and its calibre obstructed by a firm, reddish-gray plug which projected downwards about 1½ inches from the pelvis of the kidney. This plug was not attached to the ureter for a short distance above

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its lower extremity, but near the pelvis the mass gained firm adhesion to the mucous membrane. On microscopic examination it was found to be a firm, partially decolorized blood-clot, which was continuous with a softer clot occupying the pelvis of the kidney. Its presence entirely occluded the ureter and prevented the escape of any discharge whatever from the left kidney into the bladder. The lower part of the left ureter was quite healthy. At the point where the puncture with the needle had been made there was marked discoloration of the capsule, and the morbid tissue around the track of the needle showed more advanced degeneration than elsewhere. Corresponding to this point of the capsule was a patch of discoloration with a thin layer of lymph on the peritoneal covering of the anterior abdominal wall. No extension of the inflammation had occurred.

Dr. A. H. Smith made some remarks upon the propriety of exploratory punctures in such cases, and stated that, from the results of the post-mortem examination in this case, he had no doubt but that, had the child been in better condition, death would have been materially hastened by the inflammation and degenerative tissue changes set up around the point of puncture. The great difficulty in always positively recognizing the presence of fluctuation in such cases was alluded to by Dr. William Goodell and illustrated by a case of

OBLITERATION OF THE FALLOPIAN TUBES, ACCOMPANIED BY AMENORRHŒA AND STERILITY.

Dr. R. G. Curtin read the following history: C—— W——, a stout, robust, middle-aged Irish woman, was admitted August 28, 1866, to the insane department of the Philadelphia Hospital, laboring under an attack of acute mania brought on by intemperance. After her admission, in a lucid interval, she informed Dr. Curtin that she had never menstruated, but that periodically she had pains in the head and back, with all the other symptoms usually accompanying the performance of this function, and attributed her mental condition, in a measure, to the absence of the flow. She had been married and living with her husband for ten years, and had never conceived. The maniacal symptoms returned, and she died, very suddenly, three days after admission.

On post-mortem examination no abnormal condition of the brain could be discovered; the immediate cause of death was an extensive pulmonary apoplexy. The external sexual organs were normal, the uterus undersized, but with all its appendages complete. On both fallopian tubes, about midway between

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their extremities, were bead-like prominences. On laying them open two calcareous nodules were found, each one about the size of a pea, and completely obstructing the calibre of the tubes, which, above these points, were dilated and distended by fluid. The ovaries were marked with numerous cicatrices of ruptured graafian vesicles—one apparently being only three weeks old. No evidences of pelvic peritonitis.

Dr. William Pepper remarked that cretaceous nodules appeared to him to be the remains of old blood-clots which had originally formed in the fallopian tubes. In the great majority of cases, at least, calcareous formations occur as the sequelæ of former plastic exudation or of coagula. The transformation is effected by the disintegration and absorption of the organic constituents, while the inorganic calcareous portions remain as an amorphous mass. The symmetrical disposition of the nodules in the present case seems to render probable the view of their being transformed coagula. In this connection Dr. William Pepper alluded to a series of morbid conditions of the fallopian tubes which he had observed, in which different stages of this process appeared to be present. In one instance both fallopian tubes were distended with firm, partially-decolorized, but not as yet disintegrated clots. In a second, both tubes were much enlarged and filled with a soft, cheesy substance of yellowish color, apparently caused by the disintegration of clots. In several other cases, the free opening of one tube was closed, and the distal portion of the tube itself distended with a clear, serous fluid (pseudo-cystic disease of the fallopian tubes). In the latter cases, it is most probable that the condition was the result of inflammatory obliteration of the free opening of the tube, and the subsequent accumulation of fluid in its extremity thus closed. But it might be that here also a clot was the starting point of the process, and the complete removal of its solid portions was followed by a pseudo-cystic condition, such as is found in the subarachnoid or arachnoid space after meningeal hemorrhage. The present specimen would seem to present still another of the sequelæ which are well known to result from the formation of coagula, and from their subsequent degenerative changes.

An animated discussion arose on the relationship existing between menstruation and ovulation. Dr. F. G. Smith defended the view that, though frequently coincident, yet they did not bear the relationship of cause and effect, and illustrated his remarks by cases. The opposite side was espoused by Drs. A. H. Smith, William Goodell, and others.

Dr. J. G. Allen related a case where a woman conceived before menstruation.

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Dr. O. P. Rex had also seen a case where a woman bore her first child at the age of 21, and menstruated, for the first time, only several years after the birth of her third child.

Other similar cases were related.

Dr. F. G. Smith spoke of a case of sudden death which recently occurred in his practice. A middle-aged lady had had seven or eight pregnancies, and, with the exception of one living child, had always miscarried, when well advanced in gestation, the cause probably being albuminuria, as that condition had invariably been present. At the time of her death she was about 4½ months advanced in utero-gestation, and, although presenting evidences of albuminuria, was apparently doing well. While talking with some friends, she suddenly expired, with all the symptoms of heart clot. No post-mortem examination could be obtained. Dr. Wm. Pepper had examined the urine, and had found a considerable amount of albumen, associated with hyaline and faintly granular tube casts, and suggested that the case had been one of latent Bright's disease with cardiac degeneration.

Meeting of August 4, 1870. Dr. Harris in the Chair.

CASE OF POST-PARTUM HEMORRHAGE CAUSED BY A DISTENDED BLADDER, ARRESTED BY THE INJECTION OF THE PERCHLORIDE OF IRON.

Dr. W. Goodell related this case as follows:—The woman had been previously delivered of a small infant, after a tedious labor, in which "forcing powders" were used. In the present labor—after suffering for three hours only—the membranes broke; the head descended in the R. O. P. position, and soon rotated to the ilium, where it became arrested. After waiting about an hour, and finding the pains inefficient, Dr. G. applied the forceps, and, without much trouble, delivered her of a child weighing not quite nine pounds. Previous to the application of the forceps he had not passed the catheter, because he rarely did so, unless the head was at the brim, or the patient had been long in labor. In accordance with his invariable custom, he gave one drachm of the fluid extract of ergot so soon as the head had cleared the perineum. The placenta was presently cast, and the womb contracted firmly. No accumulation of urine was at that time observed, although the hand carefully followed down the womb into the pelvis.

In about three hours he was summoned to the bedside of his patient to arrest an alarming hemorrhage. Upon removing the binder, and applying his hand to the abdomen, it came in con-

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tact with a soft, yielding body, which he at once commenced to knead, on the supposition that it was the flaccid uterus. Whilst thus engaged, the back of his hand accidentally touched a circumscribed tumor, high up at the epigastrium, far more dense than the other, and apparently quite isolated from it. For a moment he thought it was a fibroid tumor, attached to the womb by a long pedicle; but he very soon discovered it to be the womb itself, and that he was compressing a distended bladder. He at once drew off thirty-three ounces of urine. The womb contained no clots, but a large mass of them was turned out of the distended and greatly elongated vagina. This caused the womb to descend again into the pelvis, but it refused to respond perfectly to compression, ergot, and to ice. Free bleeding continued, either from the uterine cavity or else from some lacerated point in the cervix, and the woman soon began to sigh, yawn, retch, and toss about. He therefore introduced the nozzle of a syringe within the os, and slowly injected a solution of two ounces of the liq. ferri perchloridi to eight of water. The effect was immediate, and so persistent, that the napkin, applied to the vulva directly afterwards, did not require to be changed for five hours. For several days the lochia contained minute and intensely black clots, which became quite fœtid. The convalescence of the patient was slow, but perfect.

Dr. G. remarked, that few obstetrical writers allude to *post-partum* hemorrhages arising from an accumulation of urine; although, from its anatomical relations, a distended bladder would carry up the womb, and thus stretch its walls, as well as those of the vagina, when paralyzed by over distention, as after labor. He had, however, met with two other examples, but they had occurred respectively on the third and ninth day following delivery. In neither of these had he mistaken the distended bladder for the flaccid uterus; probably because the vagina by that time, had so regained its tone as not to be elongated sufficiently to isolate the uterine tumor from that of the bladder.

Dr. John S. Parry spoke of a case which had been under his care in the obstetrical wards of the Philadelphia Hospital. The woman was large and stout, had reached full term, and was suffering from slight albuminuria. After delivery she bled horribly; all the ordinary means having failed entirely in arresting the hemorrhage, a strong solution of Monsel's salt was injected into the cavity of the uterus, which almost instantly checked the bleeding. The woman made an uninterruptedly good recovery.

Dr. George Pepper stated that he had no experience with the

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injection of either of these astringent salts of iron in post-partum hemorrhage, but had used them quite extensively in metrorrhagia; he had been led to prefer tannic or chromic acid, on account of the smaller bulk and less consistence of the resulting coagula. He related the histories of two cases where he had succeeded in arresting hemorrhages with chromic acid, after failing with the subsulphate of iron. Dr. P. alluded to Dr. Nott's excellent articles in the *American Journal of Obstetrics and Diseases of Women and Children*, on Intra-uterine Medication, and referred to the author's conclusions, in which he preferred iodine and alum as hæmastatics, on account of their not coagulating the blood or discharges.

Dr. Pepper also related the history of a case where a young woman with one child, four years old, had for some six months past been menorrhagic, and complaining of symptoms of uterine ill health. On examination, a growth was discovered springing from the whole length of the anterior wall of the cervical canal. The mass was elongated, about the size and shape of an olive, and very dense, and completely non-sensitive. It was seized with sharp-toothed forceps, drawn down, and carefully dissected off with long-handled knives,—but slight pain or hemorrhage attended the operation. The next two menstrual periods were characterized by profuse hemorrhage, but ergot and the mineral acids internally, and a thorough application of a solution of chromic acid (1 pt. in 7 of water) to the base, promptly arrested the bleeding, and the woman is now well. Under the microscope the tumor proved to be of a purely fibrous character, no cellular elements being detected.

MEETING OF SEPTEMBER 1, 1870. DR. F. G. SMITH IN THE CHAIR.

A NEW METHOD OF DELIVERING THE AFTER-COMING HEAD IN CONTRACTED PELVIS.

By a diagram on the blackboard DR. WILLIAM GOODELL illustrated this method, with the following explanation: In a brim, contracted in its antero-posterior diameter, the sacral side of the after-coming head becomes fixed on the point of the projecting promontory, and its extrication can take place only when the pubic side of the head can be made to revolve around the promontory as a centre of motion, by descending over the smooth surface of the symphysis. And this can the more readily be done in such cases, because the sacrum is so scooped out and so shortened, that traction can be often made in a line

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posterior to the axis of the superior strait. Bearing this fact in mind, after grasping the neck of the child with one hand and the ankles with the other, the physician should make his first movement of traction in the axis of the *outlet*—indeed in a line anterior to this axis—by, at the same time, forcing the child's neck well against the pubes—for then the pubic side of the head will recede from the inlet, whilst the sacral side will proportionately descend over the point of the promontory, and affront the inlet. This change of position can be materially aided by an intelligent assistant, who will make pressure with both hands, through the flaccid abdominal walls, upon the vault of the child's head from before, backwards and downwards. By this manœuvre the promontory will nip the head at a point higher up and nearer to its vault; hence, the arm of the lever, measured by a line drawn from the base of the skull to the point nipped by the promontory, will be correspondingly lengthened—an advantage not to be overlooked. If now, *without for a moment relaxing the original traction-force*, its direction be reversed, and the body of the child be swept backwards upon the coccyx—the neck being also forced downwards and backwards into the hollow of the sacrum—and if the assistant at the same time reverses the direction of the external pressure upon the vault of the head, making it now from behind forwards and downwards, the pubic side of the child's head is made to revolve around the promontory and descend with the least expenditure of traction-force, and consequently with a much greater chance of safety to the child. Of course, so soon as the head has passed the brim, the line of traction must be changed to that of Carus' curve.

Dr. G. stated that, by this method, he had, thus far, delivered three women with unusually bad pelves; in one of them the child's head had to be lessened in a previous labor. His last case presented so many points of interest, he would briefly relate it. A secundipara, in her previous labor, had fortunately been prematurely delivered at the end of the seventh month of gestation. The child was still; weighed under five pounds, and yet her labor lasted over forty-eight hours, six of them being attended with extreme suffering and violent expulsive pains. On the present occasion, she went to term against the wishes of her attending physician, who had urged the induction of premature labor. At 8 A. M., when labor had lasted ten hours, Dr. G. found the water dribbling away from an unexpanded os uteri. The head, presenting the occiput to the left ilium, could not bear upon the cervix, but rolled about upon the shelf formed by the promontory. By careful measurement

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with the finger the conjugate diameter of the brim was estimated at a trifle over three inches. It was his intention to dilate the os with the water-bags and apply the forceps. But, while he was preparing to do so, the woman suddenly began to twitch her muscles, start convulsively, and to complain of blindness and intense headache. Fearing an attack of eclampsia he determined to deliver at once. The woman was accordingly thoroughly etherized, and brought down to the edge of the bed in the dorsal decubitus. Two fingers of the left hand were then squeezed into the os, and ultimately a third; by which, in conjunction with the right hand externally, version was made with great ease. One foot having been drawn down, a short time was allowed to elapse before the body and arms were delivered, in order that the breech might dilate the os. Then, by following the method he had just described, the child was soon delivered in an asphyxiated condition, but promptly recovered. It presented a deep indentation on the right side of its head, weighed seven pounds and twelve ounces, and next day measured three and a half inches at the bi-parietal diameter.

In conclusion, Dr. G. remarked, that so much power and time were gained in ordinary pelvic presentations by the plan of simply pushing the head through the brim,—a plan which he had first learned from Prof. R. A. F. Penrose,—that he was surprised it was not oftener resorted to. For, although the neck of the child could bear a very great strain without breaking, it was desirable to diminish the chances of this risk, as well as to deliver as soon as possible; since few children survived a delay at the brim of over five minutes' duration.

Dr. Horace Williams related the following history: A woman, 47 years of age, the mother of four children, ceased to menstruate two years ago, after a period of irregularity. There were no nervous disturbances at the time, but soon afterwards she began to suffer from occasional tympanitic distention of the abdomen, associated with great mental depression. The paroxysms increased in severity and frequency until Dr. Williams saw her, when they were accompanied by irregular sympathetic disturbances, such as sudden partial flushings and sweatings. The attacks would come on without warning, while she was in apparent perfect health, and bore no relationship whatever to mental or digestive derangements. During the paroxysms the abdomen would almost instantaneously become enormously tympanitic, the distention being so great as to seriously interfere with respiration, and even to bend the body backwards—the only mental disturbance being apparently

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caused by the fear of "bursting," as she expressed it. After a variable period the distention would subside as rapidly and suddenly as it had supervened, leaving her in a condition of excessive mental depression, and not unfrequently bathed in a cold sweat. She had been using assafœtida in enormous doses for two months without any benefit. On vaginal examination there was commencing senile atrophy of the uterus, and a considerable deposit of adipose tissue in the abdominal walls. Bromide of potassium entirely relieved her.

Dr. Goodell stated that he thought that the better classes of women were apt to manifest abdominal meteorism as a symptom of hysteria; while the lower orders usually were attacked with the violent or convulsive forms. He thought that in such cases as the one narrated by Dr. Williams, the hydrate of chloral would be of great benefit, though assafœtida in large doses had the sanction of the highest authorities.

Dr. F. G. Smith agreed with Dr. Goodell, and believed that in such cases the gases were not secreted from the blood-vessels, but that relaxation of the intestinal wall from withdrawal of nervous influence allowed the gas to expand freely, and so gave rise to tympanitic distention of the gut. In this way was explained those cases of distention occurring in low fevers, or upon the receipt of any great mental shock.

Dr. G. Pepper alluded to Sir James Y. Simpson's explanation of pseudo-cyesis, and thought that in such cases as the above several of these factors might be involved.

Dr. J. S. Parry related the history of a case in confirmation of these views. A young girl, not at all hysterical, upon recovering from a dangerous pneumonia, had severe pain between the scapulæ. On pressing over the third dorsal vertebra, tenderness was complained of, and instantly the abdomen became distended with gas. The girl had no uterine or other disease, and, up to the period of her sickness, was perfectly healthy and regular in the performance of her various functions.

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EARLY PUBERTY.

By ROBERT P. HARRIS, M.D., Phila., Pa.

(Read before the Philadelphia Obstetrical Society, Dec. 1st, 1870.)

My attention has been recently directed toward the subject of early puberty, in consequence of having been consulted by a lady in regard to her daughter, who commenced to menstruate last month (October), at the age of nine years and five months, the flow continuing five days. This girl has a youthful face, and a mind in correspondence with her years, but is in all other respects far advanced towards womanhood, being five feet one inch high, having well developed mammæ, rounded limbs, a moderately ulll pelvis, hair upon her pubis, and weighing ninety pounds. She has been reared in a quiet country place, educated at home, and kept free from all excitement. A sister of twelve, who is two and a half inches taller, and four pounds heavier, has as yet no sign of approaching puberty.

In contrast with this case, I present two others, each representing different types of precocious menstruation, in which the epoch anticipates the other characteristic marks of puberty. The *first* is that of a large, over-grown plethoric girl, such as are very apt to menstruate at an early age, particularly in cities, whose menses appeared for the first time two months ago, at the age of eleven years and nine months, at which time she measured five feet one inch and a half in height, and weighed one hundred and six

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pounds. The attack was of a menorrhagic character, and due no doubt to the effect of the long hot summer, acting upon a plethoric habit. With all this size and weight, there is nothing womanly in the girl's configuration; her mammæ are undeveloped, her pelvis but slightly enlarged, and the measure of her chest and waist nearly the same. The parents of both these mentioned cases are of only medium height.

The *second* is that of a little girl who came under my notice, just two years and a half ago, at the age of twelve years and six months, at which time her menses made their first appearance. She was then four feet eight inches high, of very narrow frame, and weighed seventy-two pounds. Her parents are both below medium height, that of the mother being five feet. At fifteen, which she has just reached, she measures the same in height as her mother, weighs ninety-five pounds, and is only now presenting in her figure the marks of womanhood. She is mentally quite precocious, has been educated at home, enjoys excellent health, and is strong and active, from much attention having been paid to her physical training. A sister of nearly thirteen, and better developed than the former at twelve and a half, has not yet menstruated. After the first menstrual flow ceased another made its appearance a few days later, when under an attack of measles, but soon stopped, and there was no return for six months, since which time she has been regular. At the close of the summer, as in the last case, the attack for the first and only time was menorrhagic in character.

Precocious menstruation may be divided into two varieties: 1st. That which occurs during infancy, or

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the first seven years of life. 2d. That which appears at a later period of childhood, but is still anterior to the ordinary age of puberty; *i. e.*, from seven years of age to thirteen, the latter being an early period, but not markedly precocious, because in this climate even from one-eight to one-sixth of the girls menstruate before they reach fourteen.

Infantile menstruation is by no means so rare, as any one might be led to suppose who had not examined the records found in large medical libraries. *True* menstruation, confirmed in character by all the necessary evidences of approaching puberty, has been so often met with and reported upon that a large number of well-authenticated cases might readily be collected from the journals of Europe and the United States, if thought advisable, but I think it will be sufficient to give a summary of facts, as obtained by a very extensive and tedious research.

In infantile cases, the attention of the mother or nurse is generally attracted by the womanly development of the child before there is any appearance of the menses. Children have been born with the marks of puberty upon them, or have rapidly acquired them at a very early age. Some, it is true, have menstruated without having these evidences, but such are an exception to the general rule, are generally irregular, have the symptoms of cachexia, and fall victims to some wasting disease. But, in the great majority of cases of infantile menstruation, precocious puberty is undoubtedly present, and the whole system is in correspondence with it, so that the function does not, in its performance, interfere with the growth or health of the subject. From an examination of numerous re-

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ported cases of infantile puberty, I have drawn the following conclusions, viz. :

1st. With very rare exceptions, no matter how young the infant may be in whom the menses have made their first appearance, the mammæ are found unusually developed, and the pubis shaded with hair.

2d. The subjects, have, in almost all instances, menstruated regularly, grown rapidly and vigorously, been somewhat inclined to obesity, and have not presented any signs of weakness resulting from the menstrual loss.

3d. This form of precocity appears to be little, if at all, dependent upon any climatic influence; the later variety is undoubtedly accelerated by heat.

4th. The maturity of the uterine system is generally independent of any marked precocity of development in the mental faculties.

5th. Sexual passion, so general with precociously developed male infants, is seldom a marked characteristic in females of corresponding years.

6th. The first appearance of the menses is more common during the first, second, and third years of infantile life than it is in the fourth, fifth, and sixth.

7th. Infantile puberty is more common in the female than in the male sex, although in the latter there are cases which are quite as remarkable as any in the former.

What the age of nubility may be in these subjects we are left almost to conjecture to determine, as but few observers have followed up their cases, and reported the ages at which they subsequently became mothers. In the case related by Dr. Rowlett, of Ken-

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tucky,* the child menstruated at one year, was regular thereafter, and gave birth to an infant weighing seven and three-quarter pounds, at the age of ten years and thirteen days, at which time the mother measured four feet seven inches in height, and weighed 100 pounds.

In Schmith's case, reported in 1779, the menses appeared at two years, and the child gave birth to a dead fœtus when eight years and ten months old, which was thought by its development to have reached its full term. The appearances of the mammæ and pubis of the mother were said to resemble those of a girl of seventeen.†

Sir Astley Cooper gives a very remarkable instance. The girl commenced to menstruate when three years old, and was last noticed by him in his report when seven years and five months old, at which early age she had all the appearance of a thick-set, stunted woman, so much so that she was a noticed object when in the street. She measured four feet one inch high, and had so large a pelvis, that she could no doubt have given birth to a fœtus.‡

Le Beau's case also menstruated for the first time when three, and was so large and well developed by the age of eight that he regarded her as capable of bearing a child at that period.§

Among the well-authenticated cases of early pregnancy in subjects not menstruating during the period of infancy may be mentioned the widely known one recorded by Dr. Bayliss,‖ as attended by him at the

* Transylvania Med. Jour., vol. vii., page 447.

† Sue's Essais Historiques. Paris, 1779, vol. 2, page 344.

‡ London Med. and Phys. Jour., 1810, vol. xxv., page 117.

§ Annales d'Hygiene, vol. x., page 484.

‖ Boston Med. and Surg. Jour., Sept. 9th, 1846.

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Taunton, Massachusetts, Alms House. The young mother was born of native parents in that institution, the record of which proved her to have been ten years, eight months and seven days old at the time she was herself delivered of a male infant weighing eight pounds. It was subsequently found that she had menstruated once or twice prior to impregnation, and that the father was a boy of sixteen. Notwithstanding the youth of the mother, her child grew vigorously, so that at the age of three years and two months, he measured three feet, five inches, and weighed forty six pounds.

I have not met with any *well-authenticated* record of birth having taken place in England prior to the age of twelve years.* Thorpe delivered a girl a few months over twelve (exact age not given) of a full-grown but still-born fœtus. "Her figure was that of a well-grown young woman, with fully developed mammæ."

A girl aged twelve years, seven months and three days, gave birth to a full-grown child at Coventry, England, September 16th, 1848; she commenced to menstruate at ten years and six months. The father was a man of forty-seven.†

Probably the earliest case of parturition in this city was that which occurred in the practice of Dr. George Fox about thirty years ago, where the mother, according to the statements of her parents, which there was no reason to discredit, was eleven years and three months old at the time of her delivery. She was in labor two days; affected with convulsions from its commencement until some hours after its de-

* Edinburgh Med. and Surg. Jour., vol. xxxviii., page 231.

† Phil. Med. Ex., 1849, vol. v., page 494, from Brit. Rec Obs. Med.

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livery, which was accomplished by means of forceps, and gave birth to a living fœtus of full maturity which died in a few hours. The mother bore the appearances of precocious puberty, and made a good recovery. The case has never been reported in any of our journals, and I was unable to learn the age at which she commenced to menstruate, or any other particulars in regard to her, as Dr. F. was obliged to give me his account from memory. It is more than twenty years since he first told me of the occurrence.

I have not examined with any degree of care into the subject of male precocity, but am inclined to believe from what I have learned that there is a greater proportion of cases among the black than the white race; whether this be a correct opinion or not, it is certain that some of the most remarkable cases of infantile puberty, associated with herculean muscular development, that have ever been placed upon record were of the African race.

As a counterpart to the first recorded case of puberty in this article, I will give one male case of the same age, which has come under my own observation. He belongs to the white race, and the higher classes of society; commenced to exhibit marks of puberty at nine years of age, in the growth of his beard, extraordinary size, character of voice, etc. At twelve, he had a full beard, ceased to grow in height, and was a man in all respects, except in intellect, which subsequently developed fully. He had, besides, the sexual passions of a man, which he indulged to a marked degree. Having ceased to grow at twelve, although large for his age at that time, he presented,

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at that of ordinary manhood, a short, stunted appearance, as such cases are apt to do.

It is impossible to determine with any degree of accuracy from the tables which have been published what is the proportion of females menstruating in temperate regions at the ages of nine, ten and eleven years, for the reason that to do this would require much more extensive and carefully collected records, because of the small percentage which is thus affected. In the cities of Paris and London, taking all classes into the enumeration, I presume that one girl menstruates at the age of nine, to from one hundred to two hundred who are thus affected at a later period of life. In India, where the maximum is reached at twelve, the proportion of these earlier years is much greater, and may be more satisfactorily determined. Among the Hindoos, from one to two per cent. menstruate as early as nine; three to four per cent. at ten; eight per cent. at eleven; and twenty-five per cent. at twelve. This is more especially the case with the inhabitants of Calcutta, in whom the catamenia make their appearance somewhat earlier than in some other parts of India, where the climate is cooler, or the people belong to another race; for the term "Hindoo" embraces many very distinct nationalities, and it is a question whether ethnological influence is not more potent than difference of temperature, except where the latter is extreme, in determiming the age of puberty. However this may be, it is a well-established fact that the Hindoos, taken collectively, from the hot portions of India, without respect to caste or race, menstruate much earlier than the women of temperate climates. By this mode of

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computation it will be seen that the greatest number in India reach puberty at twelve years of age; that sixty-five per cent. of them menstruate before reaching fourteen, against but twenty-five per cent. of the women of France and England; and that before one-half of those in these two named countries have reached puberty, four-fifths of the Hindoos have attained it.

To make comparisons of any value between cities, countries, or climates, based upon a *general mean average*, not less than several thousand cases should be enumerated, and in all instances the exact age in years, months and days should be given. This not having been done, although the results have been tabulated in years and fractions, the next best plan is to compare the proportions which menstruate prior to any given age, as I have done above. It is impossible by any means of computation to arrive at a perfectly satisfactory result, if we are to base our calculations upon the tables which have been prepared by different observers, especially those which refer to the inhabitants of barbarous or half-civilized countries where, through an imperfect knowledge of the language and the ignorance of the women in regard to the question of age, accuracy is unattainable.

The question of the influence of climate I consider by no means satisfactorily settled as yet. That heat does stimulate into early maturity the uterine system, I believe has been well established; but how much is also due to difference of race and grade of civilization has not been. That the early puberty of the Hindoo is in great measure effected by the custom of early marriage has been claimed by Roberton,* but cer-

*Essays and Notes on Midwifery, London, 1851.

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tainly not proven by comparison with other nations inhabiting hot conntries, where this practice is almost universal, or even with those of temperate or cold ones, for in them the laxity of morals amongst the lower classes affords in great measure an equivalent stimulus. It is well established that in all hot countries the maximum age of catamenial inception is earlier than in temperate and cold ones, no matter what the race or moral influence may be. How great this fractional difference may be is yet to be determined, or what is the mean average of puberty in our region as compared with another.

In Paris, the maximum age is fourteen in some tables, and fifteen in others, the numbers in either year being nearly the same. In London, the highest number menstruate at fifteen, and from the tables published it would appear that the general priority was in favor of the former. In the large cities of our Middle States no very extensive or accurate tables have been prepared, but it is probable that they would vary but little from those of Paris, the practical difference of precedence being in our favor.

That heat has an influence over menstrual function is very evident from the history of the following case: Several years since, a young lady was sent to me from a hot country to be treated for menorrhagia, with which she had been long afflicted. Soon after reaching Philadelphia her menstrual period came on, and being less profuse than formerly, I determined to try the effects of climate alone. She remained here for three years, was regular, gained flesh, but had no menorrhagia. After her return home the abnormal condition returned and continued monthly, so she re-

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solved to return North, where she now is, in better health and flesh than she ever was in her life.

While I believe firmly in the stimulating effects of continued heat upon the menstrual function in young girls, I do not see any reason for holding the same view in respect to infantile cases, which appear to depend entirely upon some peculiar condition of the nervous system, by which not only are the organs of generation precociously developed, but the powers of assimilation largely increased, so that bone, muscle, areolar fat, and nerve force are rapidly produced. Heat has an enervating effect upon infantile subjects until the process of dentition is complete, and hence would be likely to antagonize rather than favor the developments referred to, which most commonly take place during the first years of infancy. I may be in error, but until we have the means of establishing the contrary, theory must be allowed to stand in lieu of facts, for of the numerous reported cases but very few have come from hot countries.

Shortness of stature commonly results from infantile puberty, the ribs and pelvis being developed apparently at the expense of the spine and long bones, although there have been some exceptions to this rule. Where the menses appear at eight, nine, ten and eleven years of age, the growth of the body is not usually interfered with. Velpeau, in his Midwifery, mentions the case of a girl in whom the catamenia appeared at the age of eight and a half years, and says that at fourteen she was as tall and robust as the majority of women at twenty. I met in New York with a case of puberty at nine, in a girl who, although robust, was not above an average height, but by the

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age of eighteen was a full-sized woman, although her mother was quite short, and her father below medium height.

In conclusion, I would urge upon all physicians the importance of warning parents not to let their children grow up to puberty in ignorance as to the menstrual function, for this may not only lead to great nervous disturbance, but serious disease. I met in New York with a woman of twenty-six years of age having her heart so frightfully diseased that she was not only a great sufferer, but was looked upon by physicians as a living curiosity, whose affection resulted from rheumatic inflammation produced by her having bathed her genitals at the age of thirteen, under the impression that the menstrual flow was a bleeding from some accidental injury, her mother never having warned her of the event, or instructed her as to what she should do upon its appearance. This was a lesson to me which I have made of some practical value whenever occasion required it, and a means of enforcing compliance.

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REPORTED BY GEORGE PEPPER, M.D., SECRETARY.

MEETING OF NOVEMBER 3D, 1870. DR. R. P. HARRIS IN THE CHAIR.

CASE OF ROSTRATED MALACOSTEON PELVIS.

DR. WM. GOODELL related the history of the following case: M. S.; Irish; aged 28; primipara; short in stature, and thick-set; had been "sickly" in childhood. The sudden escape of the liquor amnii ushered in her labor, and fourteen hours elapsed before the os was sufficiently dilated to admit the finger. The pelvis was laterally compressed, and the pubic symphysis beaked, the deformity answering to the Rostrated Malacosteon Pelvis. So deep was the gutter formed by the approximation of the bodies of the pubes that the urethra and neck of the bladder lay quite secure from any pressure from the child's head. Throughout her labor, which was very tedious, even after repeated and long-continued traction with the forceps, she was able at pleasure to empty her bladder, with as much facility as on other occasions. The promontory of the sacrum, although quite sharp and prominent, was not within reach of the index finger when hugging the pubic arch.

After an hour's use of Barnes' dilators, the head was found presenting its vertex to the right sacro-iliac junction. Firm traction was now made with the forceps for about an hour, but the head would not budge. After three hours the forceps was again unsuccessfully resorted to for another hour. At 6 P. M. Prof. Penrose saw the case, and, as the woman was in excellent condition, it was decided to give nature a chance of moulding the head to the pelvic irregularities. At 10 P. M., the fœtal pulsations, which had all along been quite audible, became very feeble, and soon after ceased. With the help of morphia the woman passed a pretty good night; and at 10 o'clock on the following morning Drs. Penrose and Goodell again met, Dr. J. Roberts being also present. By this time symptoms of exhaustion had set in; pulse 120; frequent vomiting of bile; lochia dark and very offensive; os uteri swollen and rigid; no descent of the head had taken place; the patient had lost all heart and was nervously tossing about.

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She was at once etherized, and no time was lost in breaking up the brain and vault, but neither the forceps nor the guarded crotchet could start the base of the skull. Hodge's Cephalotribe, applied by Prof. P., succeeded perfectly, however, although its inefficiency as a tractor caused some delay. The shoulders were with difficulty delivered, the perineum badly torn by their sudden release from the grip of the pelvic canal.

For three days afterwards the lochia were excessively fœtid; the abdomen tympanitic, but not very tender; a horpetic eruption appeared on the lips; the pulse ranging from 110 to 120. Tonics, stimulants, morphia were freely given. On the fourth day all these unfavorable symptoms began to decline, but puerperal mania now set in, which increased in violence in proportion as her strength returned. After trying morphia and the bromide of potassium in very large doses, it was found that chloral quieted her far better; but she finally refused to take any medicine whatever, under the delusion that she was being slowly poisoned. Although quite lame from the long-continued pressure of the fœtal head on the sacral plexus of nerves, she twice got out of bed to throw herself out of the window, in order to escape to her friends. On the eleventh day after her confinement she became so violent in her efforts at escape that it was deemed best to humor her and put her under the care of her friends; her appetite at this time being good, and her pulse about 85. A month later, Dr. G. received a letter from her stating that she was sound in mind, and also in body, with the exception of the lameness in her right hip.

Dr. Ellwood Wilson stated that he never could see the advantage of cephalotripsy over the operation of craniotomy. In his opinion the cephalotribe was not only a most clumsy and excessively dangerous instrument, but it could not be applied in narrow pelves. Nor did he credit the statement of those physicians who reported successful deliveries with it in pelves whose conjugate diameter ranged from two to one and a half inches.

Drs. G. Pepper and W. Goodell replied: That so numerous were the cases of extreme distortion reported by the most celebrated European accoucheurs of unquestioned veracity, in which the cephalotribe had been found perfectly successful, that it was not fair to condemn it; especially since physicians in that country rarely saw the extreme forms of distortion, and consequently had but little skill in the use of such an instrument.

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MEETING OF DECEMBER 1ST, 1870. DR. R. P. HARRIS IN THE CHAIR.

FIBROUS GROWTH OF THE LEFT LABIUM MINUS.

DR. GEORGE PEPPER reported this case as follows: Mrs. P., æt. 40; married to her second husband, but not living with him; has had three children; threatened with pulmonary tuberculosis; no syphilitic history. For three years has noticed a steadily increasing growth of left nympha, which gave no pain nor other inconvenience, save an occasional difficulty in micturition. On examination, the entire left nympha was found involved by this growth; the upper part as it passed over the clitoris was expanded into a large rounded mass, of about the dimensions of a medium sized peach. This surface was covered with normal looking skin, fissured and slightly irregular; but the lower part of the nympha was divided into four or five smaller growths of similar character, but presenting a more distinct papillary structure. The disease involved the raphé and extended to the anus; one or two small nodules being situated posteriorly to this opening.

The chain écraseur was used with all but one of the smaller ones; no hemorrhage following their removal. The parts were dressed with the dry dressing; the urine was drawn off for a few days, and the whole healed kindly in about a fortnight. Upon cutting into these growths, they were found to be dense white, creaking under the knife like cartilage. Dr. James Tyson describes the specimen thus: "Much firm resisting white fibrous tissue, with some fibrillar of curling yellow elastic tissue, having delicate and much elongated fusiform cells, more or less commingled. Certain bands of white fibrous tissue were numerously dotted with small oval granulated nuclei; usually $\frac{1}{2000}$ of an inch long and $\frac{1}{8000}$ wide. Free nuclei of this kind also abounded; whilst in certain situations adipose vesicles were present."

Dr. GOODELL spoke of the frequency of fibrous hypertrophy of these structures in certain races; as the "apron" of Hottentot women. He also alluded to the frequency of these diseases in the colored race, and especially in the women of warm climates, where excision of the redundant portion of the nymphæ was as commonly practiced on the female as the rite of circumcision on the male.

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Dr. A. H. Smith had seen growths involving the external parts and the vaginal walls; but had generally considered them due to a syphilitic taint. He recalled one case in which the growth sprang from the anterior vaginal wall, and gave to the finger much the sensation of the loop of a prelapsed funis. It did not interfere with the labor, however, and he was unable to make any subsequent examination. He further remarked that, according to Bumstead, vegetations frequently appear in pregnant women, which often grow to an immense size, and generally disappear spontaneously after delivery. Dr. S. also presented the specimens of a Fibrous Polypus of the Vagina.

This growth sprang by a narrow pedicle from the anterior vaginal wall, about one inch from the ostium vaginæ. The chief symptoms caused by it were great irritability of the neck of the bladder, accompanied with frequent and painful micturition. It was readily removed by means of an incision through the mucous membrane at the base, and by enucleation. A microscopical examination made by Dr. James Tyson showed this tumor to be the spindled celled sarcoma of Virchow's classification.

Dr. R. P. Harris then read a paper upon "Early Puberty" (Printed in full in this number of *The American Journal of Obstetrics*, Vol. iii. No. iv.)

Dr. Wm. Goodell remarked upon this paper that, from an extended experience acquired by a residence of many years in Constantinople, he was still disposed to attribute the precocious menstruation, which undoubtedly existed in warm latitudes, not so much to the influence of climate (as affirmed by Haller and Montesquieu), nor to "family peculiarity" and "race" (as Roberton contends), but to the licentious practices of the inhabitants. And if he were then met by the argument that sensual forms of vice vary in degree according to corresponding isothermal lines, attaining their maximum at the equator, irrespective of religion and nationality—which would again bring up the question of the underlying influence of climate—he should reply by adducing the significant geographical fact, that the torrid zones of the old world are peopled by Mohammedan and heathen tribes. For it is well known that these two great classes of the human family are abominably lewd the world over; whether they live on the cold plains of Siberia, on the wild steppes of Tartary or under the tropics; always provided they are congregated in cities, and are not leading a nomadic life, which lacks in opportunities.

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On the other hand, granting that the morals of tropical America could be improved, they certainly are not so bad as those of oriental countries, and not a whit worse than those of Italy, or of Russia. Again—so far as he could learn—statists had not contended for that precocity of menstruation in the women of Mexico, Central America, and of Brazil, which they had claimed for those Eastern females living in the same latitudes. Further, the argument adduced from the utter depravity and promiscuous cohabitation of the English harvest hands is not sound, so far as it is used against the influence of immorality upon the development of early menstruation; because, although the abuses were so glaring as to demand a parliamentary inquiry, yet these laborers are both underfed and overworked, two conditions of life which tend to delay the period of puberty.

He further stated that early menstruation is the rule in even the temperate regions of Turkey and of Persia. It is notoriously so in Constantinople; a city situated in a higher latitude and less oppressed with heat than Philadelphia. The causes of this, in his (Dr. G.'s) opinion, lie not only in the direct stimulation of the oriental bath, but also in the fearful morals of those countries. But that the proof of the latter point would demand a specification of some of the national vices, from which he shrank, as he feared that even the obscure hints he would strive to use would yet overstep the bounds of decency.

All the sins enumerated in the first chapter of Paul's Epistle to the Romans, and others not therein contained, but noticed by Prof. Tholuck in his "Nature and Moral Influence of Heathenism,"* are openly practiced by oriental nations. That unnatural love,† of which Sappho was accused by the ancients, has a name and a wide-spread existence in eastern *harems*. All those abominable parts of speech which are expurgated from our Latin and Greek text-books, and which describe the refinements of a cloyed sensuality, are as familiar as household words in Turkish society. Marriage was usually consummated just after—although often enough before, the first appearance of the catamenia; and when a good match is pending between a young girl and an exacting adult, various measures are adopted to urge on the sexual molimen—such as saffron and cinnamon tea, highly seasoned food, and such vile local excitations as are recommended by Albucasiss,

* Biblical Repository, 1832, p. 441.
† "Mentiturque virum prodigiosa Venus." Martial, 1, 91.

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Avicenua, and other Arabian physicians. Among Mohammedan and heathen nations, the social chat of even the upper classes would put to blush our ancestors, who read aloud to fireside circles the plays of a Congreve or of a Wycherley. Their street ballads reek with inspissated filth; their nursery rhymes exhale an impure miasm; the very cradle songs are corrupt. On great festive occasions in Constantinople, when all the women, high and low, rich and poor, gather at such favorite resorts as the Heavenly Waters or the Valley of Sweet Waters, he had repeatedly seen the mothers and daughters of the land regaled by strolling bands of gypsies with songs and pantomime, which imitated with scrupulous detail. by words and action, the most wanton dalliance of unbridled lust.

But apart from these moral provocatives of precocious menstruation, there was yet another of a different character, and not so generally known. In all Mohammedan countries, less from religious ideas of cleanliness,than for some prurient reason, there obtains a universal custom of removing the hair from the pudenda. For this purpose whole households, including the youngest children, repair, at least once a month, to the public baths, where a depilatory is applied even to the pubescent by the skilled but depraved attendants.

Now—excluding the moral effect on a young girl of such a manipulation, or of even the spectacle of its exhibition on scores of women around her; excluding also the influence of the obscene language always indulged in on such occasions—as orpiment is the chief ingredient of this depilatory, great local excitement is not infrequently induced by this immoral practice. That it was true that chemists are still at issue, whether this tersulphuret of arsenic is poisonous or not; but that he (Dr. G.) had been informed by credible native physicians that pruritus, or other forms of obstinate cutaneous and mucous irritations, were not the uncommon results of its application. Indeed, that he himself shared with other physicians the opinion that the ptosis and chronic œdema of the eye-lids—when not attributable to ophthalmia—the blear eyes and paralysis agitans, so common in the adult Turkish female, are in a great measure due to the absorption of this preparation of arsenic through the walls of the vagina, and through the mucous surfaces of the labia.

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In conclusion, if it is found that the excitements of a town life hasten on the catamenia by one year, as is proved by the researches of Szukits in Vienna, and of Brière de Boismont in Paris; if, as the latter observer states, amongst the upper classes of Parisian society the average age of puberty is so early as 13 years and 8 months; and, finally, if the stimuli of sensational novels and of theatrical entertainments are everywhere accused by thoughtful observers as the hot-beds which force on the menstrual molimen, how much more shall an indescribable looseness of morals goad on the sexual instincts of the Oriental female to an early recognition.

Dr. Robert Harris replied to these remarks as follows:—

The more I investigate the question of the causes of early menstruation, the better am I satisfied that the influence of moral training has less to do with it than that of climate and race; for if this was the case, then we ought to find in England and Wales numbers of very young mothers among the lower classes, not only in the large cities, but also, to a great extent, throughout the country, which we find not to be the case, the youngest well-authenticated instance being more than two years older than the youngest reported in the United States. There is no question but that the Hindoos, Turks, Japanese, and other inhabitants of warm countries, are trained from early childhood in the most immoral manner conceivable; but this is also, and to an equal extent, true of a large class in Great Britain. The dark races of the earth appear to be more precocious than the white, even when under the same climatic stimulus. The negroes of Africa menstruate at a very early age, as will be learned from the records made in Sierra Leone and Abyssinia; and it has also been observed in our Southern States even, where the climate is not hot, that numerous examples of menstruation at the ages of ten, eleven, and twelve years are met with in the same race. From a work entitled "The White Slaves of England," compiled from the original documents, by John C. Cobden, I extract the following with regard to the moral training of the laboring classes in that kingdom: "Beneath the wing of a government professedly Christian, there is sheltered a vast number of people who must be characterized as heathen, whose moral degradation it is appalling to contemplate, and whose code of morals is the nature of their sensual inclinations. The English peasantry are more demoralized than those of any country of Europe, if we except Russia, Turkey, South Italy, and some parts of the Austrian Empire. People of both sexes, and of all ages, parents, brothers, sisters and strangers, sleep in the same room, and sometimes as

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many as six in a bed; undress and wash in each other's presence; and women are delivered when men, women, and children are crowded together. In the 'public lodging-houses,' where the vile of all ages hire a night's shelter, the most disgusting immoralities are practised; children of both sexes, from ten to fifteen years old, sleeping naked together, a dozen in a bed, indulging in promiscuous sexual intercourse, and often dancing on the floor in two dozen at a time in the same nude state."

Mr. Mayhew reports: "I have seen fathers and mothers place their boys and girls in positions of incipient enormity, and command them to use language and gestures which would make a harlot blush, and almost a heathen tremble." "In Liverpool, Manchester, and Birmingham, illicit sexual intercourse amongst the lowest classes seems to prevail almost universally, and from a very early period of life; to this common conclusion witnesses of every rank give testimony."

Surely, if a high immoral training induces an early maturity in the uterine system, then we ought to find numerous instances of precocious menstruation and pregnancy among the peasantry of England; but we do not. That mental excitement does have some influence over the age of puberty is generally believed, but in my opinion too much credit has been awarded to it.

In determining the influence of race upon early maturity, it will be necessary to observe the effect produced upon the same people in different climates, which is a matter as yet of very difficult accomplishment, except as regards the negro and some few of the white races; for the Hindoo, Arabian, Turk and Orientals generally confine themselves to their own countries, and seldom remove to cool climates. Where the white and the negro live in the same country, especially where the climate is hot, or very mild, the latter is evidently the more precocious of the two, though not very markedly so. In cold climates, I do not believe that there is any difference, as there the negress is subjected to the depressing effect of a low temperature, which has a more proportioned influence over her than upon the white, she being evidently intended for a hot country.

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THE MECHANICAL TREATMENT OF DISPLACEMENTS OF THE UNIMPREGNANT UTERUS.

By GEORGE PEPPER, M.D., Philadelphia, Pa.

(Read before the Philadelphia Obstetrical Society.)

Before entering upon any discussion in regard to the value of the mechanical treatment of malpositions of the unimpregnated uterus, it becomes necessary to take into careful consideration three essentially associated subjects, which, if rightly understood, will aid us in arriving at correct and definite conclusions. These are, *first*, the normal position and support of the uterus; *second*, the causes of the deviations and malpositions; and, *third*, the degree of importance to be attached to these deviations and malpositions in causing the symptoms and disturbances so generally attributed to them.

The healthy nulliparous uterus occupies a median position in the cavity of the pelvis, its fundus rising very nearly to the plane of the superior strait, while its corpus has an anterior curvature impressed upon it at the position of the os uteri internum, thus giving to its long axis a curve approximating that of the pelvic canal. Thus, when the woman is erect, the long axis of the corpus uteri points upwards and forwards, forming an angle of 30° with the plane of the horizon, while the cervix uteri is directed downward and slightly backward, its extremity marking very nearly the centre of

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the pelvic cavity, viz., the centre of a general radius of about two inches; and as, in such a position, the plane of the superior strait forms an angle of 120° with the horizon, the uterus must necessarily be considerably protected from the superincumbent weight of the viscera by the projecting lumbo-sacral spine and sacral promontory—the anterior abdominal wall receiving their principal weight.

The anterior curvature of the uterus is held by Klob * and others to be acquired only during the development of the sexual organs at the approach of puberty, and differs markedly in extent in the healthy uteri of different women. This is controverted by others, who assert that anteflexion in an extreme degree is the normal condition of the uterus of the fœtus and of early childhood. Without entering into this discussion at all, it is sufficient for our purpose to know that anteflexion is acknowledged to exist normally in the female at a time when she may require treatment for her uterine condition.

The uterus floats, as it were, in its position, moved anterially by the "anterior" or "vesico-uterine" ligaments, which consist merely of reflections of the peritonæum from the anterior wall of the uterus to the posterior wall of the bladder, strengthened by the abundant connective tissue contained in the folds. The peritonæum dips down between these two organs to the level of the os uteri internum; below this point the

* "Pathological Anatomy of the Female Sexual Organs." Translated by Drs. J. Kammerer and B. F. Dawson. New York.

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connective tissue unites the supra-vaginal portion of the cervix firmly but movably to the bas fond of the urinary bladder.

Posteriorly, the "recto-uterine" ligaments have essentially the same structure. The peritonæum here is reflected from the posterior wall of the uterus to the rectum and postero-lateral walls of the pelvis, and contains in its reduplications abundant connective tissue, which at two points is collected into fibrous bands passing from the uterus to either side of the sacrum, and to which the name of "utero-sacral ligaments" has been given. The peritonæum here dips down more deeply than anteriorly, being prolonged over the posterior vaginal cul-de-sac.

The Fallopian tubes, ovaries, and the connective tissue uniting and surrounding them are enclosed in still other peritoneal reduplications, which have received the name of "broad ligaments." These, together with the "round ligaments" (prolongations of uterine tissue which pass from the cornua uteri through the inguinal canals to the tissues of the labia majora and mons veneris), are the only lateral supports of the uterus, and can be of but little service in preventing anterior or downward displacements of the uterus; for it is probable that they are put upon the stretch in the latter cases only, and even then not until the organ has descended low down in the pelvis or protruded from the vulva.

These various ligaments, as they have been erroneously called, act mainly by checking and limiting the extent of lateral, anterior, and posterior deviations, and not by affording any very marked support. This can

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be demonstrated in the cadaver by making forcible traction on the cervix uteri downwards in the pelvic curve. "After the uterus has descended about one and a half inches—the extent to which it can be drawn down without damage—the following relative bearings are assumed by the parts: The utero-sacral ligaments, having lost their natural curve around the forepart of the rectum, diverge, and become straight from being forcibly stretched between their attachments. The alar mesentery and its contents are pulled forward and slightly depressed. The round ligaments are curved round (but not on the stretch) in following their uterine attachments. The ureters and ovarian vessels are somewhat more prominent under their peritoneal investment. No sign of strain on either the round or broad ligaments. After dividing the utero-sacral ligaments, the uterus descends about one inch further, when it is arrested by the subperitoneal pelvic cellular tissue, particularly where it surrounds and accompanies the uterine blood-vessels, as it is here strengthened by additional trabecular filaments. Complete prolapse or procidentia only takes place after the yielding of the pelvic reflections of the broad ligaments, which occurs from behind forwards, the round ligament being the last put on the stretch." *

This causes the important duty of affording support to the uterus from below upward to devolve to a great extent upon the vagina, which acts as a hollow but closed muscular column, having its base strongly

* Savage on "The Anatomy of the Female Pelvic Organs."

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supported by its abutments in the sphincter vaginæ muscle and the perineal structures; while its upper portion embraces the cervix uteri, into which it is inserted. The fact, however, that the uterine body is placed at almost a right angle with the long axis of the vagina, would necessarily diminish very materially the amount of support thus afforded, and would leave to other forces a part at least of his important task.

In addition to these distinct and readily demonstrable supports, we have the subperitoneal pelvic connective tissue everywhere surrounding the uterus, and uniting it strongly but movably to the neighboring parts, while the almost constant slight distension of the bladder in front, and the accumulation of fæces and flatus above the annulus of the gut behind, tend to prevent the more marked forms of either anterior or posterior displacements.

Yet, after having allowed the existence and validity of these various structures and agencies, we are still at a loss to satisfactorily account for certain facts in relation to the position and support of the uterus, for on vaginal examination in the normal condition of the parts we do not find these various tissues on the stretch, as we would expect them to be if they were the sole supports the uterus had; while, at the same time, the disadvantageous manner of the insertion of the vagina, the want of resistance in its walls in many cases, and the fact that, even when it is thoroughly relaxed and its abutment destroyed, displacements do not necessarily occur, would render some further supporting agency necessary. This is, I think, supplied by a force called

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by J. Matthews Duncan "the retentive power of the abdomen." He claims for the abdominal cavity properties other than those of a mere passive receptacle for the viscera, viz., that it has an active retentive power equivalent to, and somewhat resembling, suction. That by this force not only is the uterus held in position, but all the other abdominal viscera. He further advances that, by modifications of this force, from alterations in the vital resistance and in the resiliency of the tissues, we have a tendency to the various uterine displacements, with tension upon and, finally, stretching of the ligaments and supports. Nearly the same idea was promulgated by E. P. Banning, of New York, in a series of propositions:* 1. "That the viscera, like the bones, had but one proper position and mutual bearing, and that any violation of the same would be followed by corresponding morbid physical and functional results, in the one case as well as in the other."

2. "That the viscera do not occupy in a *depending* condition from their ligamentous moorings, but in a supported and elevated state, by and through the elastic and energetic abdominal and dorsal walls, the aggregate action of which is upward, from the lowest inch of the abdominal contents to the pectoral apex."

3. "That an atrophied or relaxed condition of these trunkal walls will liberate visceral gravity, and allow of a lineal descent, first, upon the pelvic organs; and, second, through them upon the pelvic nerves, arteries, veins, and lymphatics."

* *Medical and Surgical Reporter*, vol. xv., No. 2, July 14, 1866.

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4. "That this condition will constitute an actual and practical dislocation," which, in proportion to its extent, may induce an almost unlimited number of morbid symptoms.

The uterus, in its perfectly normal condition, is so movably attached that it is constantly subjected to trifling displacements (if they may be so called), which are merely temporary, and due to natural causes, such as retroversion from overdistension of the urinary bladder, anteversion from accumulations of fæces in the rectum, or prolapse from flatulent distension of the bowels, the congestion of menstruation, or the enlargement of early pregnancy. But as these movements of accommodation give rise to no symptoms, and are but a part of the *perfect plan*, our attention is directed only to those malpositions which arise from some organic injury, disease, or imperfection in the parts.

From this brief account of the normal position of the uterus, and of the anatomy of the various ligaments and supports, we can readily understand that displacements may take place in every possible direction, of all grades of importance, and from an almost unlimited number of causes. These may, however, be roughly classified into those due to extraneous pressure or traction upon the uterus, increased weight of the organ itself, destruction, relaxation, or weakening of its various supports, and to modifications of the retentive power of the abdomen. These various factors, either singly or combined, may be present in any case, and the preponderating one will necessarily modify our diagnosis, prognosis, and treatment.

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Thus, in prolapsus, the patient's chances of recovery or relief will vary with the cause, whether that be relaxation of the vagina, laceration of the perinæum, inflammatory enlargement of the uterus, fibrous tumors in its walls or cavity, traction exerted on it by inflammatory adhesions, the pressure of ovarian or other abdominal tumors, etc. And what has been said of prolapsus applies equally to the other forms of uterine malposition. Hence, the diagnosis of the displacements, the appreciation of their causes, and the indications for mechanical treatment will require as careful differentiation as any other problem in medical science.

We must next learn, if possible, the proper degree of importance to be attached to the various uterine displacements, and endeavor to distinguish the class of symptoms due to them from that caused by other morbid conditions. Here, on the very threshold, we are met by the difficulty of two most diametrically opposed opinions, each advocated by able, learned, and conscientious men. One party holds that displacements exercise but little influence, are attended by trifling, if any, suffering, and are only evidences of other morbid conditions. The others, on the contrary, give them the foremost rank, attribute most of the suffering of uterine diseases to their influences, and consider them the cause of any other morbid condition that may coexist. To the one a pessary is an object of abhorrence, while to the other it is a *sine quâ non* in the successful management of every case. As it is impossible to reconcile or give adherence to such extremely diverse opinions, we see the mass of the profession steering between them

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—now approaching one, now the other view, as fashion or some new teaching sways them. "Having no reason for the faith that is in them," they either use some long-cherished form of pessary for all cases alike, or else, wildly, in their confusion try any or all that may be recommended.

The countless variety of (abdominal) supporters and pessaries of every conceivable pattern and shape that can now be obtained, each honestly advocated by excellent men, and each capable in their opinion of giving relief to and radically curing every form of displacement, might lead us to apply the rule that, when a long list of remedies are vaunted as specifics for any one disease, be sure that the disorder is in the main incurable. Fortunately, all this confusion is due rather to faulty or exaggerated ideas of the causes of displacements, the importance of the minor deviations, or a total misapplication of mechanical contrivances, rather than to the essentially irremediable nature of the conditions themselves.

In a discussion in which any attempt to cite authorities in support of arguments only involves in hopeless confusion, it seems best to give merely personal views and convictions, and, by endeavoring to state the subject clearly and fairly, allow each one to draw his own conclusions. Hence, we must carefully enquire from every possible standpoint what is the importance of uterine displacements. The uterus, so closely connected by its powerful and widespread sympathies with all parts of the body, situated between two extremely sensitive and constantly active organs (the bladder and rectum), having assigned to it the most important function of the

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female economy, and when diseased one of the most exquisitely sensitive of all tissues, could not, it would seem, be materially displaced without producing some disturbance in one or other of these directions. Yet, while all this would appear only natural, we constantly see the uterus displaced by some of the agents already alluded to, and held in its altered position for hours or days without producing any symptoms whatever; further, we even find it bound down by the results of old pelvic inflammation without giving rise to any inconvenience.

Unfortunately, in attempting the study of this subject, we are met by the almost insuperable obstacle occasioned by the great similarity of the symptoms caused by the various diseases of the pelvic viscera. Thus, it is impossible to assert positively how much of the suffering in any given case is caused by mere malposition, trifling inflammatory disease of the uterus, or by some morbid condition of the rectum, and yet these several disturbances are very frequently associated.

In my own experience, it has been very rare to meet with perfectly uncomplicated cases of malposition. Generally, there has been a foreign element sufficient to obscure or to cause a continuance of the symptoms after the deviation was corrected. I am firmly persuaded that even the most trifling catarrhal condition of the cervical mucous membrane is occasionally capable of producing the most violent symptoms; and hence, while any such influence is in existence, I am as much disposed to attribute suffering to it as to coexistent displacement. In such cases, I believe it is impossible to say which is

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the cause, which the effect, for either condition may be the forerunner of the other.

It may not be amiss to give a brief sketch of a few cases illustrative of the conclusions I am anxious to deduce.

Case I.—M. B., æt. 52; married; eight children and one miscarriage; youngest child ten years old; ceased menstruating two years ago; has complained of symptoms of uterine disease and attendant poor health for sixteen years. Made her first appearance at the clinic of the Lying-in Charity, Sept. 19, 1866. Haggard, pale, despondent, and bent nearly double. Complaining of severe pain in the lower back and abdomen, with profuse muco-purulent vaginal discharge. Poor appetite, impaired digestion, and constipated bowels. Has received medical aid, but without benefit. On exploration, the vagina was found healthy, but much relaxed, the uterus in the second degree of prolapse, the fundus thrown back into the hollow of the sacrum. This organ was but slightly increased in size, and rather too hard. The os abnormally patulous; the sound entered two inches, causing dull aching pain and slight hæmorrhage. There was a small patch of true ulceration on the posterior lip, and evidences of inflammatory disease of the lining mucous membrane.

The ulcerated surface was stimulated by nitrate of silver, and a moderate-sized very flexible ring pessary was introduced, with almost instantaneous relief. She was ordered a ferruginous tonic for her general condition, and an astringent vaginal wash.

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At her next appearance, two weeks from the first visit, the following note was made: "Is much improved in appearance; states that she has not felt so well for sixteen years. All the symptoms have either entirely disappeared or been very much mitigated. The pessary gives perfect relief. On examination, the uterus appears to have assumed nearly its normal position." And yet the notes go on to state that the inflammatory disease still existed in much the same condition; and, although the benefit at first experienced continued, it was fully three months before the uterus could be pronounced healthy.

Case II.—M. McG., æt. 55, married, mother of six children. Ceased menstruating about ten years ago. Has suffered from chronic bronchitis every winter for a number of years past. Seven years ago she began to complain of severe sacro-lumbar pain, and gradually has been obliged to resign her domestic duties, and, when she came under observation in the winter of 1867, had been confined to her room for three years. She had almost lost the use of her lower extremities, was much stooped forward, and complained of a constant dull backache, becoming agonizing when she made any exertion. She had incontinence of urine, obstinate constipation, but no vaginal discharge. Has been treated for paraplegia, but without any result. On examination, the uterus was found partially protruding from the vulva when she assumed the erect posture, but on lying down it retreated within the parts. The vagina was very much dilated and relaxed, the uterus small and

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atrophied. There were no evidences of any inflammatory disease, the tissues being soft and supple, of normal color and sensitiveness. After reducing and retaining it in position by a large, very flexible ring pessary, all the symptoms disappeared, and in a few weeks she was able to walk a distance of several miles and attend to her household duties without any return of the old disturbance. With the exception of occasionally changing the pessary, and some medication for the bronchial trouble, she has since needed no attention, and is at present as strong and well as any woman of her age could wish to be.

Case III.—M. C., æt. 32, married, one child seven years old. Four years ago she produced abortion on herself by passing a quill into the uterine cavity when about three months advanced in utero-gestation. This act was followed by profuse hæmorrhage, and, from her account, probably an attack of peri- or para-metritis. From that time she has suffered from severe and constant burning pain deep in the left iliac fossa, scanty and painful menstruation, pain during intercourse, and a total loss of sexual appetite. There has been little or no vaginal discharge, even just preceding or following the menstrual periods. She has lost flesh and strength, has become chlorotic in appearance, and is irritable and despondent. She was first seen by me in the spring of 1869. On examination, the uterus was found prolapsed and retroverted, the whole organ large, dense, and sensitive, the os uteri transverse and patulous, the lips rigid. The sound entered backwards and

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to the left, a distance of three inches, causing dull aching pain, but no hæmorrhage. The corpus uteri was directed slightly to the left, and firmly bound down by the adhesions of old inflammatory trouble. On specular examination, a considerable patchy discoloration was seen on both the anterior and posterior lips; no distinct granulations were detected. There was a slight transparent gelatinous mucous discharge from the cervical canal. As it was impossible to reposit the uterus, attention was entirely directed to the chronic metritis. She was put upon the internal use of the syr. ferri iodid. Counter-irritation to the lower abdomen was made by tinct. iodin. The cavity of the uterus was thoroughly medicated with a solution of iodin. and potas. iodid.; while the vaginal cervix was painted with iodized collodion. After prolonged treatment, she entirely recovered, at least so far as her general health and absence of all symptoms were concerned. The uterus still remained indurated and firmly fixed in the position that it at first occupied. Strange to say, though all pain during intercourse has passed away, yet she has never regained the sexual orgasm.

Case IV.—Mrs. K., æt. 25, married for about one year, sterile, has organic cardiac disease of rheumatic origin. For years has been a great sufferer from constant symptoms of uterine and rectal disturbance, and the most severe congestive dysmenorrhœa. Marriage seemed to act most unfavorably on her. Sexual intercourse was extremely painful, and followed by paroxysms of syncopal dyspnœa. Menstruation, always pain-

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ful, became agonizing, and the hæmorrhage continued throughout the intermenstrual periods. Painful and frequent micturition and bleeding hæmorrhoids were also added to the list of her symptoms. On examination, the uterus was found to be fixed by adhesions in the second degree of retroversion. The cervical mucous membrane was deeply congested, granular, and constantly oozing blood. The rectum was exquisitely sensitive, and the seat of internal hæmorrhoids. Sponge tents, local stimuli, and astringents directed to the relief of the inflammation and congestion, although arresting the hæmorrhage temporarily, still failed to remove the vascular condition of the mucous membrane, and, as the uterus appeared hopelessly immovable, but little benefit was experienced. After several months of unusually severe suffering, I determined to endeavor to elevate the fundus uteri, and by long-continued efforts with the colpeurynter and air-pessaries succeeded sufficiently to allow the adaptation of a lever-pessary with a high posterior bar. From that time the symptoms began to diminish in severity; menstruation, although still rather painful, became scanty, the granulations disappeared, and the uterine mucous membrane became pale. Relief to this extent has now continued for about one year, her cardiac disease probably preventing any further improvement.

Out of numerous examples of similar facts, these have been selected as being more or less typical of the different conditions. But from these and many other analogous cases, I feel justified in drawing the following conclusions, to aid in the study of uterine diseases, and

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in the selection of cases suitable for the use of mechanical treatment:

1. Cases undoubtedly occur in which all, or nearly all, the symptoms are due to uterine malpositions, although these may be associated with other disease; and when these displacements are corrected, so far as the painful sensations are concerned, a cure may be said to have been effected, leaving the residuary disease to be treated and removed at leisure.

2. That in other instances uncomplicated malpositions are capable of giving rise to the most severe local and general disturbances, and that their correction will completely restore the patient at once to health and comfort.

3. Cases occur of displacements coexisting with inflammatory or other diseases, in which, if, from the irremediable nature of the malpositions, or from other considerations, the entire attention be directed to the removal or mitigation of the coexisting trouble, all symptoms will disappear, although the displacement remains as marked as at first.

4. Cases occur in which inflammatory diseases, as a result, is associated with uterine displacement, and, although skilful treatment be directed against the former condition, no relief can be obtained until the malposition is rectified, when the inflammation will subside spontaneously.

5. And lastly (though I have not adduced an example for its support), I am satisfied from repeated observation that cases occur in which inflammation and displacement coexist, and that the removal of the in-

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flammatory hypertrophy will, by lessening the weight of the uterus, cause the malposition to be gradually corrected. Hence, it would appear that some mechanical contrivances for correcting uterine malpositions play an absolutely essential, though not by any means a universally applicable, part in our successful treatment of uterine diseases.

I now propose to discuss the various mechanical contrivances for the support of the uterus or for the correction of its deviations, the manner in which these instruments act, and the forms of malposition capable of being relieved by them. The name of pessaries "is Legion, for they are many," and even allowing that each variety was supposed by its originator to supply some particular want or to fit some special case, still here, as in all mechanical contrivances, the vast majority of the instruments are found by experience to be utterly useless or even positively injurious. It is not my purpose to attempt any accurate description of these various forms of instruments, handed down from father to son as heirlooms, but merely to consider fully and fairly a few of those apparently acting on the most rational principles, and hence best adapted to relieve the conditions calling for aid.

Acknowledging, as we have, the occasional necessity and value of mechanical support for the displaced uterus, and having studied the normal position of the parts, we are now prepared to state the requirements that such instruments must meet. The first grand principle to be clearly kept in view is that we must have a gentle, continuous, yet yielding support in the needed

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direction, while at the same time the uterine supports must not be still further stretched and weakened, nor the vagina distended, paralyzed, and rendered unfit for future aid. The means used should always be curative if possible, intended merely to temporarily replace the natural means of support, and ought not to be followed by greater distension or relaxation, and by the subsequent necessity for the use of larger and larger instruments, as is too apt to be the case. The more nearly the instrument comes up to this standard, the more complete in suitable cases, will be the benefit experienced.

These agents may, for convenience of study, be divided into three divisions: first, those which act entirely externally, comprising the varieties of braces, abdominal supporters, and bandages; second, those which act entirely internally—this division being subdivided into the utero-vaginal or uterine stem pessaries and the purely vaginal instruments; and third, those which act internally, but have also an external point of support and attachment.

The instruments included under the first division, namely, the abdominal bandages and supporters, are frequently used and highly recommended by certain of the profession, whilst they are as totally discarded by others. They, however, have their chief advocates in nurses and other non-professional persons. As ordinarily employed, I am satisfied that they do far more harm than good; but I am equally certain that, in a limited number of carefully selected cases, when skilfully and judiciously applied, they are capable of affording

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relief. Their province seems to be merely that of a substitute for the relaxed abdominal walls, viz., by supporting the superincumbent viscera, and by rest restoring the tone to the stretched and paralyzed muscle; thus directly aiding in restoring the diminished "retentive power" of the abdomen. They cannot, of course, afford any direct support to the uterus, except when that organ is so much enlarged as to rise above the superior pelvic strait, and is strongly anteverted or anteflexed—conditions which may result from pregnancy or from the various tumors of the uterus. In certain cases too, where, from disease, faulty physical development, or from other cause, the plane of the superior pelvic strait, instead of inclining to the horizon at an angle of 120°, is brought more nearly parallel to it, thus allowing the whole weight of the abdominal viscera to fall directly into the excavation of the pelvis; these external supporters may, by correcting this deviation, be of great value. Banning's brace, an instrument highly spoken of and credited with wonderful success, acts in this way by restoring the normal direction to the pelvic brim by its lever-like action. The pelvic band depresses the symphysis pubis, while the "back pad" acts the part of a fulcrum, thrusting the lumbar spine forward; the shoulder-braces draw the shoulder backward, and thus supply the power. I have only a very limited experience with this instrument, and that of a rather unfavorable character, but believe that in certain cases it is calculated to be of great benefit. All the other recognized instruments of this pattern act in one or other of the two methods just alluded to. The

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great disadvantages of all forms of external supporters are to be found in the difficulty with which they are retained in their proper position, in the tendency they have, when displaced or improperly applied, to merely depress the abdominal walls, and thus, by diminishing the capacity of the abdominal cavity, to crowd the viscera both upward and downward; and, finally, in the atrophy and increased relaxation from which all muscular structures suffer when subjected to firm and continuous pressure.

Of the second group, we have, first, the various intra-uterine stem instruments, the difference in the professional estimate of their value being fully as great as with the external supporters, etc. Some attribute the greatest possible benefit and the least possible amount of injury to their use; while others consider them as most dangerous, and, although occasionally indicated, still so fraught with peril as to be rarely or never permissible. The position they properly hold, however, seems to be midway between these two extremes. The danger arising from their use must be recognized, for it certainly exists; at the same time, their special advantages should claim careful attention. They are the only form of pessary that can act either very positively or directly in straightening out the canal of the uterus in some of the more marked forms of flexion, and to this class of cases it seems to me that their use should be almost entirely restricted. They do not vary very materially in form, at least not in comparison with the great variety of purely vaginal instruments; the only essential elements being the vaginal portion, generally con-

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sisting of a small, smooth round or oval disc, and, springing from it, a flexible stem, resembling the extremity of the uterine sound, which can be bent to accommodate itself to the canal of the uterus, and is of such a length as to be one-half inch shorter than the uterine cavity. The manner in which this instrument is kept in position will necessarily vary with the character and requirements of the case. They should never have a firmly fixed or unyielding point of attachment, however, as circumstances may readily occur which would force the uterus violently against the stem, thus bruising its tissue, and giving rise to metritis, peritonitis, peri- and para-metritis, accidents not rarely following their use. The instruments should never be introduced and worn continuously from the very first; the toleration of the uterus can only be acquired by short trials, beginning with an hour and increasing the period each day, removing the stem instantly should any pain or other bad effect be produced. Fortunately, the class of cases admitting of their use is not large—retroflexion being quite rare, and generally capable of relief by other and less dangerous means, while even extreme anteflexion, as we have seen from the study of the normal position of the uterus, being only an exaggeration of the natural curve of that organ, is rarely attended by sufficiently urgent and distressing symptoms to warrant extreme measures. And since, with more advanced anatomical views and surgical appliances at our disposal, we can, by division of either the anterior or posterior wall of the cervix uteri, or by the use of tents, safely straighten out even the most angulated canal, I would much prefer some such method of man-

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agement, where it was feasible, to the use of the intra-uterine stem, though with the precautions already given they may be tried in rebellious cases, and, if tolerated, may often be followed by very great temporary or even permanent relief.

The second subdivision of this group embraces the purely vaginal pessaries, which are in far more general use, being, in fact, the only instruments kept in many of the shops, and it is in these that mechanical ingenuity seems to have run riot.

Their simplest form is the tampon, a mere plug composed of cotton or sponge, which can give only an uncertain and ill-directed support (generally merely thrusting the uterus upward), whilst to do so it must distend the vagina, and thus tend to relax and weaken it, rendering it unfit to perform its duty as one of the most valuable of the uterine supports. When, however, the posterior vaginal cul-de-sac is carefully packed, such support may be useful in relieving retroversion or retroflexion. Ordinarily, this plug can be readily introduced by the patient herself, either with or without the aid of a "tampon placer." When, however, support in any particular direction is required, it will not do to trust to such haphazard means, but it must be applied by the physician himself. In cases where some form of pessary is urgently called for, and yet the tissues are too sensitive to tolerate the pressure of any of the more unyielding varieties, these tampons may prove useful by accustoming the parts to the pressure of a foreign body—an effect that may be still further aided by medicating them with astringent or sedative substances. They ought

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never to be considered as more than merely temporary means, requiring to be changed very frequently, as the discharges collecting in their interstices soon become offensive, thus causing irritation or inflammation of the parts, or even giving rise to septicæmia. Wads of raw cotton, moistened with glycerine, carefully shaped in the hand, and having a string attached to facilitate removal, are not only much cheaper, cleaner, and more manageable than the sponge, but are as efficient.

The colpeurynter and other air-pessaries may be ranked next in order. These instruments, in their simpler uses, act merely as those just described, having, however, their own peculiar advantages and disadvantages. Thus, on the one hand, they do not absorb the irritating discharges, but, on the other hand, they distend the vagina more forcibly, require to be introduced by the physician himself, and, as the india-rubber becomes softened and very offensive from maceration in the discharges, demand great care and cleanliness. They have, however, in their inflatability, a property which renders them peculiarly appropriate to the treatment of those cases in which the uterus is fixed more or less firmly in an unnatural position—as in chronic inversion, retroversion, etc.

The globe, disc, and other somewhat analogous forms do not require any particular notice other than one of condemnation. They act merely by cramming the uterus up in the pelvis, and by pressing on the cervix, but in no way control the position of the corpus uteri. Indeed, they thus often convert what was a simple prolapse into a more serious ante- or retroversion or flexion.

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Under the above head we may, I think, safely classify Hoffman's pessary, a mere modification of the disc, though it claims an anatomical basis. The flexible ring pessary comes next, an instrument occasionally invaluable for temporary relief, but certainly not well calculated to fulfil the highest aim of a pessary—an absolute cure. It fails in effecting this on account of the elastic pressure it exerts on the vaginal walls, distending and stretching them, and thus rendering them unfit to reassume their normal contractile and supporting power. In certain cases, however, as where the perinæum is lacerated or greatly relaxed, and the uterus and vagina prolapsed, unless the operations of elytrorrhaphy or perinaorrhaphy be advisable, the distension of the upper vagina is often one of the few means of support at our disposal, and in such cases the elastic ring may be judiciously and advantageously employed. Occasionally, even after the operations for narrowing the vulvar fissure or vagina, the uterus still presses so heavily upon the newly restored tissue that some mechanical treatment is necessary to relieve this strain, and here again this instrument will often serve a good purpose.

Passing on from these simpler forms of supports, useful as we have seen them occasionally to be, we came to those instruments constructed on more correct anatomical and mechanical principles, to meet many, if not all, of the requirements demanded of a perfect pessary; at least, so far as any purely vaginal instrument can meet them. Hodge's closed lever, with Smith's modification (which consists in merely narrowing the anterior portion of the instrument, thus giving it an

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egg-shaped outline as seen from above, and, at the same time, depressing the anterior bar still further), is the highest and purest type of this class; for, as so clearly explained by Dr. Hodge, it acts on the principle of a lever, elevating the uterus without materially distending the vagina. His open lever, Grailly Hewitt's pessary for anteversion, Scattergood's pessary, and some others are but trifling and, for the most part, utterly useless modifications. These pessaries are probably more universally applicable than any other varieties, but it is only in certain kinds of displacements that they act in their fullest and most perfect manner.

Third.—Probably the most rational forms of instruments are those which act on the uterus or vagina from an external *point d'appui.* Here we have, or ought to have, realized the highest aim of the pessary; for the uterus is certainly elevated and its axis thrown in the normal position, and yet with no strain brought to bear on the vaginal walls or uterine supports. They, however, have very positive disadvantages: thus, they are much less comfortable, often press or chafe the external parts, and require great care on the part of the patient to prevent them from becoming displaced. One of the best and most ingenious of these instruments is that of Dr. Eph. Cutler, of Woburn, Mass. This pessary is of two forms: in one, the vaginal stem expands into a fenestrated uterine support, very similar to the posterior portion of the Hodge lever; while, in the other, there is a ring set at right angles to this stem, through which the cervex uteri passes, and thus the pressure is brought to bear on the vaginal reflections, both anteriorly, poste-

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riorly, and laterally. In these instruments, the anterior commissure of the perinæum is the fulcrum of the lever, the force being applied by the elasticity of the india-rubber band which passes between the nates to the waist-strap, and the weight represented by the uterus. In the first form, the posterior bar passes into the posterior vaginal cul-de-sac, elevating and thrusting the fundus uteri forwards, while, in the second form, the uterus is elevated and the cervix thrust forward. Numerous instruments are constructed on a somewhat similar plan, though most of this class act on the uterus or vagina through a stiff or only slightly elastic stem, and have their attachment to some of the forms of external apparatus alluded to. By this method, the pressure upon the anterior commissure of the perinæum is avoided, and, though we thus lose one of the greatest advantages of Cutler's pessary—namely, its lever-like action—yet we avoid what is often an insupportable strain on the sensitive tissues of the perinæum.

The most serious objections to this variety of instruments—and in spite of all drawbacks I believe them to be the best—are their much greater expense, the difficulty in properly applying them, the prolonged medical supervision necessary, and the dislike most women have to any contrivance that in any way encumbers or restrains them. But, in spite of all this, as any woman of ordinary intelligence or nerve can soon learn to manage them perfectly, removing them at night and reapplying them in the morning, they are invaluable in cases which require a permanent support, or in which it is impossible for the patient to be under competent medi-

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cal care. Even where such indications are absent, I feel convinced that they merit more attention than they generally receive. To mixed instruments or combinations of the various groups or forms already referred to, it is impossible even to allude, for various modifications to suit certain peculiarities can often only be supplied at the time by the ingenuity of the practitioner.

The class of cases which is best suited to the use of pessaries is, of course, that in which mere displacement exists, the cause having been transitory, or of such a trifling character as not to complicate treatment, and yet the symptoms call urgently for relief. But, if we confine our attention to only such cases (I feel sure), we will but rarely be obliged to use any form of mechanical support. We have seen, however, that it is often necessary or advisable to use some means of support for the uterus, either as a palliative or as *one* of the aids to a cure. To assist us in this selection, we may take up the varieties of uterine displacement, and assign to each the forms of instruments best suited to its requirements, premising, however, that nothing very definite can be advanced.

Thus, in the first two stages of prolapsus uteri, the first and simplest forms of displacement, we can use with advantage the smaller and more flexible "rings," the "levers," and the simpler forms of instruments acting from external points of attachment. While in the third stage, or procidentia, if perinaorrhaphy or elytrorrhaphy be unnecessary, the same classes of instruments will generally answer our purpose, though, if the purely vaginal pessaries be used, they must be larger, so

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as to act by a more positive distension of the vagina.

It is in anteversion, in both its degrees, when it requires aid, that we find the greatest difficulty in relieving the symptoms, and, in fact, cases will present themselves in which it will be impossible to replace the uterus and retain it in his proper position. However, Hewitt's modification of the closed lever, Simpson's pessary,* Cutler's ring, and some of the other vaginal pessaries can be tried, and may prove sufficient.

Retroversion, although the most serious of all the displacements in its symptoms and results, is the most readily relieved. The modified lever with a high posterior bar, Cutler's lever, and most of those instruments which act from external attachments, will answer the purpose. It is in this form of uterine malposition that the full perfection of the closed lever shows itself.

The latero-versions rarely require any mechanical aid, being usually due to some originally unsymmetrical development of the internal organs of generation, or to some pelvic disease which has drawn or forced the uterus out of its normal position. Should it, however, be deemed necessary to attempt the reposition of the uterus, an instrument acting on one or both lateral vaginal cul-de-sacs, from a fixed vaginal stem, would seem the most rational form.

The flexions, when in their more trifling forms, can often be relieved by those pessaries recommended for the versions, but, when more marked, may require the

* "Simpson's Pessary," *Edinburgh Medical Journal*, January, 1871.

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use of the intra-uterine stem, or even of some of the operative surgical procedures.

When any of the above forms of displacements, either from the nature of their cause or from long continuance in a faulty position, have become fixed and immovable, we have the colpeurynter and other inflatable instruments to aid us in their reposition. Frequently repeated and gentle force sometimes will overcome adhesions which at first sight appeared perfectly unyielding.

In writing upon any medical topic, it is always more satisfactory to be able to advocate unhesitatingly some one plan of treatment. Yet, since we have such diverse conditions to contend with, and such a great variety of mechanical contrivances from which to make our selections, and since, in addition, we are forced to concede special advantages to one or another of these appliances; it behooves us to take a middle course, and give only a general view of the whole subject, leaving positive opinions for particular cases. With such approximating conclusions in the present instance, we must perforce rest content.

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OVARIAN DROPSY OF FIFTY YEARS' STANDING.

THE PATIENT BEING THREE TIMES PREGNANT DURING ITS EXISTENCE, AND GIVING BIRTH TO LIVING CHILDREN ON EACH OCCASION.

By ROBERT P. HARRIS, M.D., Philadelphia, Pa.

(Read before the Philadelphia Obstetrical Society.)

PREGNANCY, complicated with ovarian dropsy, is comparatively of rare occurrence, and, when it does exist, particularly if the tumor be of large size, is apt to result either in abortion or rupture of the cyst, although there have been instances where the full period of utero-gestation has been attained even under the complication of the existence of a large ovarian tumor, equal in dimensions to the gravid uterus at term. If the abdominal cavity will admit of a distension sufficient to accommodate fifty-four quarts of fluid, as in the case reported by Dr. Thomas Watson,* then it may more readily contain a developed uterus and a moderately large ovarian cyst. So large a number as four mature births have thus been known to take place successively, the dropsical mother being as large after delivery as an ordinary-sized pregnant woman. A valuable paper upon this subject was sent me, this week, by its author, Dr. J. C. Reeve, of Dayton, Ohio, in the April number of the *American Practitioner*, which has induced me to present the records of the case here given.

* "Practice of Physic," page 753.

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Mrs. E. E., a lady living in affluent circumstances, was born in Philadelphia, in 1784, of healthy and long-lived parentage, her father reaching eighty-one, and mother ninety-three years of age. She was married in 1807, and gave birth to a son in 1809, who still survives. Soon after her first delivery, the existence of an ovarian tumor was discovered by Dr. Benjamin Rush, in whose care she was placed for medical treatment. In 1811, the cyst was of such a size that Dr. Physick was called upon to operate by paracentesis abdominis, and four gallons of fluid were removed. In 1812, she gave birth to a daughter, who grew to be a healthy woman, and is still living. In 1815 and 1818, also, she was delivered of living children, the second being less robust than the first, and the third of a delicate, sickly appearance, and weighing six pounds. The second daughter enjoys fair average health at the present time, and is a woman of medium size; the third grew up, and for many years enjoyed good health, although of a delicate build; but at the age of 45 fell a victim to phthisis pulmonalis.

No subsequent pregnancy took place. The last period of gestation was much the most severe of the four, and, when three months advanced, her vomiting was so excessive that her life was in danger. She was at this time affected with an œdematous swelling of the abdominal walls in addition to the ovarian disease, and, a blister having been applied to the epigastrium, the effused fluid drained out in large quantity, to her great relief. She suffered so much abdominal pain from pressure that laudanum was administered, of which she took on an average about a teaspoonful per diem. When

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the fœtus was delivered, it shrieked, apparently from pain, and lay a long time in slight convulsions, to check which laudanum was administered, drop by drop, until, before the first day of its life was over it had taken sufficient to have killed more than a dozen babies in whom the susceptibility to the effect of the poison had not been blunted through the habit of their mother.

I have not been able to ascertain how many tappings were performed during her period of child-bearing and subsequently until the year 1848, when the disease became more active. Prior to 1825 she was operated upon at long intervals, and from 1825 to 1848 not at all, the increase of accumulation not requiring. Thus was realized the accuracy of the remark by Dr. Thomas Watson in his "Practice of Physic," viz.: "Not unfrequently, after a period of active increase in the tumor, the morbid process, without any obvious cause, suddenly stops; and the pause may be final; or after an uncertain interval the disease may resume its former activity" (page 747).

Mrs. E. E. was tapped in June, 1848, about one-half of the fluid being removed; in November, 1849, when all that could be evacuated was drawn off, being estimated at from 35 to 40 quarts; in January, 1851; in the spring of 1852 and 1853; September, 1854; September, 1855; April, 1856; November, 1856; May, 1857; November, 1857; June, 1858; March, 1859; September, 1859; March, 1860; and July, 1860, making seventeen operations in twelve years. During the latter years of her life, they became more frequent, because only half of the fluid was removed upon each occasion,

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on account of the great prostration which followed the entire emptying of the cyst. Prior to each operation, the pressure became so great as to obstruct the intestinal canal, giving rise to nausea, vomiting, and, if not soon relieved, to inversion of the peristaltic action of the bowels, as in strangulated hernia. Immediate relief followed paracentesis, and the healthy action of the stomach was restored.

Mrs. E. died of exhaustion in August, 1860, having nearly reached the age of seventy-six. For many years she was confined entirely to the house, and on an average twenty-two hours out of the twenty-four in her chamber. She took opium largely; was much emaciated in face and upper extremities, and extremely large in abdominal circumference, especially when the cyst required evacuating. Successful ovariotomy would have been a wonderful relief to such a living death.

In connection with this subject, it may be well to state that statistics go to prove that there is little if any danger of abortion following paracentesis, but, on the contrary, it tends to prevent its occurrence. Ovariotomy during pregnancy almost invariably gives rise to abortion within forty-eight hours. Cessation of development or accumulation generally depends upon the draining of the cyst through a rupture or perforation into the peritoneal cavity, the vagina, or intestines, and spontaneous cures sometimes result in this way by the collapsing of the cyst walls.

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

REPORTED BY GEORGE PEPPER, M.D., SECRETARY.

STATED MEETING, APRIL 6, 1871.

CARCINOMA OF UTERUS.

DR. PARRY presented a specimen of carcinoma of uterus, and read the history of the case. The patient was a negress, past middle age. The disease had destroyed the cervix uteri and involved the base of the bladder, obliterating the vesical extremities of the ureters. The pelves of both kidneys were distended, the liver cirrhosed and contained cancerous nodules, and the apices of the lungs were infiltrated with softening cheesy material.

Dr. JENKS spoke of the association of tubercle and cancer in the uterine tissue, alluding to the rarity of carcinoma of the corpus uteri, and the comparative frequency of tubercular disease of this part.

Dr. PARRY thought the above case was interesting from the rarity of cancerous disease in the negress, and also as bearing on the cancerous cachexia—a condition, he thought, rarely well marked unless there had been profuse hæmorrhages during the progress of the case.

Dr. R. P. HARRIS read a paper on "Ovarian Disease of Fifty Years' Standing." Three pregnancies had occurred during the existence of the disease.

Dr. LUDLOW related the details of a case in which a woman, after delivery, still remained much enlarged, the cause of which was discovered to be due to an enormous ovarian cyst. The tumor disappeared spontaneously, and she remained well for five years. At the end of that time she began again to enlarge, and finally was tapped through the roof of the vagina. Only a small quantity of fluid escaped, and the patient soon died from the distension and exhaustion. He also gave the history of a second case of almost exactly the same character, which, however, recovered entirely, and remained well.

Dr. GEORGE PEPPER read a paper on "Mechanical Treatment in Displacements of the Unimpregnant Uterus."—(See AMERICAN JOURNAL OF OBSTETRICS, August, 1871.)

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STATED MEETING, MAY 4, 1871.

MENINGEAL CYSTIC TUMOR.

Dr. A. H. SMITH presented a specimen of meningeal cystic tumor, and read the history of the case from which it had been taken. The labor was an easy one, the mass descending first, the child being born before the physician reached his patient. The child died in convulsions the fourth day after delivery. The tumor sprang directly from the occiput, was covered by skin with fine hair on it, and had a cicatrix on its under surface. Was evidently cystic in its nature, fluctuated on palpation, and measured 13½ inches in circumference. There appeared to be no brain tissue in the tumor, and during the child's life it could be handled without causing pain or producing any cerebral disturbance.

The specimen had not been examined carefully, as Dr. S. was anxious to present it to the Society in its distended condition. It was referred to a committee, consisting of Drs. A. H. Smith, Parry, and Jenks, for careful examination.

Dr. A. H. Smith also presented, as illustrating the above case, a dried specimen of a child, with a very similar tumor. The specimen has been preserved in the museum of the Philadelphia Hospital.

Dr. WILLARD stated that he had been present when the child last spoken of had been delivered. The labor was a very troublesome one; for, though the head presented, so soon as it was forced into the pelvic excavation, the vertex reascended, and the side of the head took its place. Forceps were applied, and after prolonged traction the cyst was ruptured, and then the delivery was readily accomplished. The cyst sprang from the occipital bone and the three upper cervical vertebræ, which were deficient at this point. On dissection, the brain structure was found to be spread out on the walls in flattened, ribbon-like convolutions.

CANCER.

Dr. PARRY presented a specimen of cancer taken from the body of a woman thirty-nine years of age. The symptoms were vaginal hæmorrhage, hypogastric pain and tenderness, emaciation, but no cachexia.

On vaginal exploration, the uterus was found to be of about normal size. She died from exhaustion; and, on post-mortem examination, the right ovary was found to be the seat of extensive cancerous disease, which had also extended to the pelvic cellular tissue and urinary bladder. The uterus was but very slightly involved.

Dr. A. H. SMITH alluded to Dr. Parry's case, and thought it

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very unusual for death to take place until either some vital organ was seriously involved, or fistulous openings were formed and the strength exhausted by profuse discharges.

RUPTURE OF THE GRAVID UTERUS.

Dr. A. H. SMITH presented a specimen of rupture of the gravid uterus at the seventh month of utero-gestation from gangrenous inflammation of its tissue. The patient at twenty-seven had been married eighteen years, and Dr. Smith had delivered her with forceps of her only living child eight years ago. She had not conceived since until the present time, and, when about six and a half months gone, she was suddenly seized, while in good health, with violent pain in the umbilical region, not attended, however, by collapse, and, Dr. Smith being absent from the city, she was placed under the care of a neighboring physician. On Dr. Smith's return, which was in a few days, he found that she was much prostrated from the severe pain, and had not felt fœtal movements since her attack. The cervix uteri was thick, dense, and non-patulous, and the pains had no effect upon it. The pain was quieted, and she was put upon tonics and stimuli, and for a few days seemed to improve, but soon passed into a condition of septicæmia. At this time it was deemed advisable to induce labor, but the rapidly increasing prostration prevented its accomplishment, and she died undelivered two days afterwards. On post-mortem examination, the uterus was found in a gangrenous condition, the anterior wall ruptured near the fundus, and the fœtus and placenta, in an advanced stage of decomposition, were free in the abdominal cavity, their presence there having given rise to some acute peritoneal inflammation.*

Dr. PARRY thought the case might be explained on the theory that it had been originally an attack of peritonitis with subsequent gangrenous inflammation of the uterus, and referred to the history of a case of puerperal peritonitis, where gangrenous inflammation of the descending colon had taken place.

Dr. GOODELL, while admitting the plausibility of the above view, was more inclined to attribute the symptoms and result to a sudden, concealed antepartum hæmorrhage, the pressure of the clot causing the gangrenous inflammation.

STATED MEETING, JUNE 1, 1871.

THE CEPHALOTRIBE.

Dr. GOODELL exhibited to the Society Dr. Braxton Hicks's

* Both Dr. Smith's cases will be reported more fully for a future number of the JOURNAL.

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cephalotribe, and illustrated on the blackboard the peculiar advantages of this instrument. He claimed for it not only superior compressing powers, but also a tenacity of grip which made it an excellent tractor. These properties obviated the necessity for the withdrawal of the instrument and the resort to the crotchet; and thus was avoided that after-expansion of the head which always took place whenever this was done.

CONCEALED ACCIDENTAL HÆMORRHAGE OF THE GRAVID WOMB.

Dr. Goodell also related the following history of a case of concealed accidental hæmorrhage of the gravid womb:

Three weeks before labor, the patient, after house-moving, was seized with "crampy and colicky pains," followed by vomitings and collapse. Under appropriate treatment she recovered, but remained very weak, and thereafter complained of a constant pain in her left side. Six days before labor, after severe exertion, she had a return of the symptoms. These were again controlled by rest and opiates, but a constant pain remained, with occasional exacerbations, until she went into labor. Dr. G. now saw her for the first time, and found her very pale and weak. The pains of labor seemed very inefficient, and yet she delivered herself very shortly after his arrival. The child was *still* and premature, with the skin peeling off from the extremities. Immediately after its delivery, the placenta and a large quantity of grumous blood followed. No further hæmorrhage occurred, but the convalescence was slow, requiring several weeks of rest and tonics.

Dr. Wm. F. Jenks showed the placenta of this case, which was the seat of two apoplectic effusions, one of much older date than the other. The microscopic appearances were those of degenerated placental tissue and old coagula.

OVUM OF FOUR MONTHS.

Dr. Wharton Sinkler showed an ovum of about four months' development. The cord was around the neck and left arm of the fœtus, at both of which points the tissues were much compressed and grooved. The vessels in the cord were also obliterated. Dr. Sinkler thought the specimen interesting from its bearing on spontaneous amputations in utero, as well as on abortions from death of the fœtus from interrupted circulation.

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THE CÆSAREAN OPERATION IN THE UNITED STATES.

By ROBERT P. HARRIS, M.D., Philadelphia, Pa.,
President of the Philadelphia Obstetrical Society.

(Read before the Society, September, 7th, 1871.)

In entering upon the preparation of a record embracing exclusively the cases of Cæsarean section which belong to the credit of the United States, it becomes a matter of some importance to determine what constitutes the operation called by the title "Cæsarean," a question which has recently been impressed upon me by reason of the receipt of numerous letters reporting cases under this name, to which they were not entitled. I take the ground, that there is and can be but one operation truly "Cæsarean," and that is the ancient "section," made through the abdominal and uterine walls for the purpose of removing the fœtus, with the hope of saving the life of the mother, and if possible that of the child. The application of the term to any other form of operation only creates confusion and leads to error, as any one will find to his constant annoyance who undertakes to collect a record such as I here present. The abdominal section for the removal of a fœtus which has escaped into the peritoneal cavity through a rent in the uterus, is frequently called the Cæsarean operation; and so also is the opening by the

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same means of an extra uterine fœtal cyst, or the evacuation of one through the vagina. Gastro-hysterotomy has several times been reported to me under this head; and in fact men appear to think if they have cut in any way into the abdominal cavity for the removal of a fœtus, whether they incise the uterus or not, that they have performed the Cæsarean operation.

The triple term of Greek origin, "gastro-hysterotomy," conveys in itself the definition of the word "Cæsarean" as properly applied; and this, to avoid confusion, I soon found myself forced to use in all letters of inquiry, instead of the latter.

The nomenclature of abdominal surgery is certainly very defective, and might readily be corrected. The Greek word γαστηρ, meaning both abdomen and stomach, has led to much confusion in the use of the term "Gastrotomy," which should be limited to operations involving the stomach itself. The word ητρον, meaning lower belly, should be used as the root of a new term, "Etronotomy," for incision of the lower abdomen when internal organs do not require section, in which event the term should bear upon the viscera involved. "Hysterotomy" should be confined to operations through the vagina, and never applied, as by the French and some English writers, to the Cæsarean operation, the former even employing it instead of the abdominal section in describing the operation after ruptured uterus. The term "Laparotomy," for section of the lumbar region, should come into more general use. "Gastrotomy," as now employed, covers too great a range of meaning to

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have a true definiteness of character. If the uterus could not be reached except through the abdominal walls, the term Hysterotomy would be sufficiently definite for the Cæsarean operation.

It is not my purpose to enter into a disquisition concerning the history of this ancient operation, in order to determine the origin of its name, or whether Julius Cæsar or any of his family were introduced by it into society. It matters little, in this connection, whether or not it was known to the Jews before the Christian era, or who originated the process. It might have been a woman opening her own abdomen in a desperate effort to obtain relief, or doing the same office for a companion without due regard to consequences; or perhaps an enraged bull or cow; or a husband intent upon affording speedy relief to an agonizing wife unable, after long suffering, to deliver herself.

These are not idle hypotheses, as they all have foundations in the occurrences of modern times. The first authentic instance of the operation in the British Isles was that performed with success by Mary Dunally upon Alice O'Neal, in Ireland, in 1739, after a labor of twelve days; and the first *recorded* in the United States, by a girl of fourteen years of age upon herself in 1822. Several women have been known to recover, and their children live, after the latter have been removed from them through a rent produced by the horn of a bull or cow. And the case of Elizabeth Alenspachen, of Siegenhausen, Germany, who was operated upon with success by her husband in the early part of the sixteenth century, will be found mentioned in al-

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most every work upon obstetrics. There is therefore every reason for believing that the possibility of success may have been first demonstrated either by an accident or the boldness of ignorance.

Of the first 38 cases operated upon in Great Britain, covering the period from 1739 to 1845, but four recovered, one being that referred to as the work of a common midwife. We are in the habit of giving great credit to the successful surgeon, and are not perhaps sufficiently alive to the fact that, all other things being equal, a happy termination is often not so much due to any difference of management, as to an unaccountable indisposition in the parts wounded to take on an unhealthy action. This is particularly the case with all operations exposing the peritoneal cavity, and in no one more so than that of gastro-hysterotomy. Very few of the subjects of this operation are in a physical condition to inspire us with a hope of success at the time of its performance; most of them either having some disease in their osseous system, as malacosteon, or bearing the consequences of rickets, in the form of bone deformities and a stunted growth. It is therefore not to be expected that such patients should recover from so severe an operation, involving tissues of a highly vascular character and inflammatory nature, unless it be performed under the most favorable circumstances possible as to time, place, and the physical condition of the patient. If every expedient, in the form of embryotomy, turning, decapitation, etc., be first resorted to, and the woman exhausted thereby to a degree rendering the danger to her life almost equal to that result

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ing from the Cæsarean operation itself, it is hardly to be expected that she will survive this final stroke of surgery with any but that minimum amount of hope which is based upon the knowledge that some have recovered when it appeared impossible that they should. It may be contended that the rickets of childhood leaves no evidence of physical weakness in the health of the adult; but it is at least a matter of serious doubt whether such stunted subjects can bear hemorrhage and exhaustion like those of full bodily development.

Next to the immediate dangers from shock, hemorrhage, and peritonitis, we have those which follow almost as a natural result from the long time usually permitted to elapse before the Cæsarean operation is finally determined upon, viz.: secondary nerve-shock, septicæmia, and slow exhaustion; hence the importance of being previously informed as to what constitutes the necessity for this species of surgical interference, so that the patient can have all the benefits which may arise from a prompt decision, and an early use of the knife. Like traumatic erysipelas in some of its features, peritonitis, as the result of gastro-hysterotomy, is most apt to occur in those whose systems have by some means been reduced below the standard of health, whether the cause be recent or remote.

If this operation could be performed experimentally upon one hundred sound healthy women soon after the commencement of a natural labor, there is every reason to believe that a very large proportion would

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recover, even greater than from ovariotomy, which is necessarily practised upon diseased subjects; and it is no doubt this previously healthy state which has saved those who have recovered from the dreadful fright and shock consequent upon being torn open by a bull or cow, or such as have operated upon themselves, or been opened after rupture of the uterus. If rupture of the uterus was generally treated in this way immediately after its occurrence, there can be little doubt but that a much larger proportion of the women would be saved than now escape after the means commonly resorted to, of delivering the fœtus *per vias naturales.*

Delay.—This word is given special prominence here, as expressing one great cause of the want of success in the Cæsarean operation, especially in England, but also to a considerable extent in this country. There is no operation in the whole range of surgery in which there is such a disposition to hesitate and wait, in the hope that it may be avoided, as this; and it is not infrequently postponed for hours after it has become evident that nothing can be gained by it. Both of Dr. Gibson's operations, performed with full success upon Mrs. Reybold of this city, were in contemplation before labor, and commenced as early as deemed practicable. Ovariotomy was at one time regarded by many physicians as an unjustifiable operation, on account of the great mortality which followed it; but success in a large proportion of cases, in the hands of experienced surgeons, has placed it in its true light before the profession. Apply the same skill and care to the

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Cæsarean operation, and it will then present its true measure of danger as a surgical operation, instead of the exaggerated character which it has been made to exhibit.

Gastro-hysterotomy has been very rarely performed in the United States, so much so that in many of the thirty-seven commonwealths not one can be found. New York City, with its transfluvial neighbors, and Philadelphia, collectively containing more than 2,000,000 of inhabitants, present but five cases of the operation, three of which belong to Philadelphia. Of these five, two women and one child perished. It is apparently of a more recent date than the abdominal section for extra-uterine pregnancy, or the vaginal for the same condition, there being no published example that I can find prior to the year 1822, whilst it is well established that the former was performed in a case of long-standing cystic pregnancy in New York, in 1792, by Dr. McKnight;* and the latter in 1816, at Edisto Island, South Carolina, by Dr. John King.† Both women, and in the latter the child, were saved. I am inclined to believe, however, that the Cæsarean operation was performed much earlier than the cases published. Perhaps the oldest operation of gastro-hysterotomy in North America was that which was performed in the Island of Jamaica,‡ in 1769, upon herself by a slave woman, with success.

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* Memoirs Med. Soc. London, vol. iv.

† N. Y. Med. Repository, 1871, p. 388.

‡ Boston Med. and Surg. Jour., vol. xii., p. 398.

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Among the blacks of the South there has been a larger proportion of cases than the whites of the whole country, and in some of the cotton-growing and sugar producing States nearly every subject of the operation was a negress. This has, however, been subject to a considerable variation; for South Carolina, with an abundant black population, presents but one case, and the only one in Georgia was a white woman, as also in North Carolina, so far as can be ascertained by careful inquiry. In the Carolinas, I am informed upon good authority, there is very little deformity among the blacks, and the women seldom require the use of the forceps to accomplish their delivery. A contrary condition appears to prevail in Louisiana and Alabama, where the Cæsarean cases have been in much larger proportion than any other part of the Union. It may also be of some interest to state here, that in Mexico the native women are remarkably free from pelvic deformity, as I have learned recently, from a physician of large experience in that country, and that they are rather inclined than otherwise to excessive development of the pelvis.

The question of practical delivery per vias naturales, as based upon the conjugate and other diameters of the pelvis, has never been satisfactorily settled, and probably never can be, so long as human skill varies and the fœtal head is not of uniform size at maturity. A small fœtus may readily be removed alive through a moderately narrowed pelvis, where a large one might cause great difficulty, and even endanger life. I have seen a mother, after a severe labor under craniotomy, give birth, with-

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out assistance, to a second child within a year, simply because of the first having a large solid head, and the second the reverse; and this variation of development lost the woman about half of a large family of children.

Since the revival of the cephalotribe of Assalini, and its improvement by Baudelocque and his successors, the question of possibilities in delivery through deformed pelves has assumed a more definite character in regard to the space demanded in inches and fractions for the assurance of success. There is a disposition on the part of the advocates of this instrument to narrow down the practicable space to such a point that the dangers of cephalotripsy, evisceration, amputation, &c., made necessary for the passage of the fœtus, render the collective operative procedure quite as dangerous as the operation of gastro-hysterotomy, if not more fatal to the mother, without the advantage of saving the life of the child. It is impossible to make a rule of measurement to apply to all pelves, as they differ so much in interior contour, the conjugate measures being often no indication of the largest circle of space at either strait. I have in my possession a manuscript collection of drawings of forty deformed pelves, sixteen of them representing those of women who died from the Cæsarean operation, and no two of them have the same figure, either in the superior or inferior strait. We can classify these deformities into *reniform*, *rostrate*, *cordiform*, *oblique*, &c., but still we must come at last to the necessity of deciding in each individual living case,

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what it is our duty to do, and to make this decision firmly and without delay.

The deformities of the pelvis which we have to contend with in this country are almost entirely due to rickets; some few are believed to be congenital, or may result from coxalgic distortion; but cases of malacosteon, so common in some European localities, are exceedingly rare, so much so that many of our most experienced obstetricians have never seen an example of the disease. The general contour of the superior straight in most cases of deformity will indicate the disease which produced it; the rostration of the ossa pubis being due in almost all instances to adult pelvic softening, and the reniform changes of the strait to rickets. But there are exceptions to this rule, as irregular rostration is sometimes produced by the latter.

Rickets being a disease of early infancy, affecting a large proportion of its subjects during the creeping period, produces various pelvic shapes, according to the peculiar mode of locomotion adopted by the child, which form of propulsion is in a measure selected of necessity, from the condition of the lower extremities. The closure of the superior strait from rickets is sometimes as nearly complete as it is in the worst cases of malacosteon, one of my drawings from an American case* representing this strait as a distorted transverse slit, five-eighths of an inch in the conjugate diameter, and at no point more than an inch wide. Another sketch repre-

* See case reported in this paper by Prof. Abram Sager, to appear in next number of this journal.

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sents a pelvis so deformed by the same disease, that the superior strait will at no point admit of the passage of a sphere of more than $1\frac{7}{16}$ of an inch in diameter, and the inferior strait is still smaller; yet after failure of delivery in this case by craniotomy, the Cæsarean operation was twice declined by a majority of the physicians in consultation, and the woman died from rupture of the uterus, after seventy-two hours of labor.* There appears to be a disposition on the part of physicians in such cases to wait and hope, when they can give no good solid reason for so doing. No doubt the results of the celebrated case of Elizabeth Sherwood, delivered of a putrid fœtus by Dr. William Osborne, London, in 1776, has led to an erroneous opinion as to what might be expected by patient waiting. Because this woman escaped rupture of the uterus and septicæmic poisoning, it does not prove that it would be generally a safe practice to perforate the fœtal head, wait thirty-six hours for putrefactive softening to take place, and then by three hours' traction deliver the fœtus through a deformed pelvis, in her case said to measure $1\frac{3}{4}$ inches by about $2\frac{1}{2}$. Because, after a labor of seventy-five hours, she made a good recovery, I do not think it should recommend a practice for general adoption, to avoid the dangers of the Cæsarean operation.

The dangers of embryotomy in extreme deformity of the pelvis should be compared with those of gastro-hysterotomy, where the operation has been primary,

* Ransom's case, Trans. Obstet. Soc., London, 1867.

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and performed early and not as a sequence to craniotomy, as in many cases, if we wish to decide in a labor as to which form of delivery offers the patient the best hope of recovery. If the circumstances of the case show an equality of risk, then it is clearly our duty to adopt the latter for the sake of the child; and it will in many cases, even where the destruction of the fœtus offers a fractional difference in favor of the woman, be a question of conscience between her and the operator as to their duty in the case. So far as a general rule can be made to govern the profession in this country, it has been conceded that we are always justified in destroying the child to save the mother, provided: 1st. That its death is clearly unavoidable; and 2d. That by its destruction we do not endanger the life of the woman to a degree equal to or greater than by the Cæsarean operation promptly performed. It is a question for individual consideration whether the offer of the risk of self-sacrifice on the part of the mother, in order to save her offspring, shall be acceded to or not; it certainly should not be if her risk by the operation be much greater than by some other mode of delivery, ending in the death of the fœtus. The position of a woman in society, her ties of relationship and friendship, and the associations which surround her, make her life far more important than that of an infant whose prospect of living to maturity, even under the most favorable circumstances, is very doubtful; and hence the slight consideration paid to the latter when the risk of the life of the former must be much increased to save it. We use the forceps to keep her from suffering, prevent exhaus-

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tion, and the dangers of a ruptured uterus, and at the same time hope by the skilful application of them to preserve the child's life; but if we cannot do so and are satisfied that our judgment is correct, we do not hesitate, however reluctantly, to sacrifice it for her sake, and she in most instances prefers this decision to running any additional risk of her own life. But whilst we do this, we must not allow ourselves to fall into the error of making improper estimates of the dangers of one form of assisted delivery as compared with another.

We do not yet know in this country, with any degree of accuracy, what are the risks of the Cæsarean operation, promptly performed, as compared with those of embryotomy in badly deformed pelves. We can approximate the knowledge by consulting the obstetrical tables of foreign countries, it is true; but as these are mainly obtained from hospital practice, we cannot be said to know the proportion of deaths to recoveries which we ought to anticipate from operations performed under favorable circumstances in our own land. It is with a view to the formation of a more correct estimate than is usually held of the risk to life in the mother and child by gastro-hysterotomy, that I have taken upon myself the task of collecting the published and unpublished cases of the operation from all parts of the United States, and now give to the medical profession the benefit of my researches. I do not claim to have obtained records of all the cases, knowing that this is impossible at this date, some of the operators having died without leaving any notes of them; but I have in

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some instances obtained by persevering search, even posthumous records from obscure and distant localities. My experience has taught me that in this country, at least, the publication or withholding of cases has been very little influenced by favorable or unfavorable results so far as the operation in question is concerned. I have had more trouble in searching and obtaining abstracts of favorable cases than their opposites, and have still in my memoranda data to show where very favorable results were obtained by surgeons long since dead, who never published, and notes of whose cases seem buried with them. I still have a hope that in the future, some of these unrecorded operations may be brought to light. As I before stated, the deformed pelves met with in the United States are mainly the result of rickets, a disease which in former times was regarded as by no means common among the native population, even of the lowest classes; but there is a reason to fear that with the growth of large cities this immunity will not continue, and in fact even now among what have been denominated the "waifs of society," the disease is becoming far more common, involving, according to some investigators, as high as thirty per cent. of them to a greater or less degree. Small pelves are not uncommon among our native women, and often lead to the necessity of using the forceps, or resorting to turning or craniotomy; but the badly deformed cases have hitherto been found almost always in foreigners, dwarfs, or negroes. This has been the case with all the subjects of the Cæsarean operation in New York and Philadelphia, as well as those of extreme deformity I have myself met with,

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the most marked of the latter being a negress and an Irish woman.

The case of the former is one of some interest in its bearing upon the question as to which should be performed—embryotomy or gastro-hysterotomy. This negress was a young primipara who had had rickets in childhood, by which she obtained a deformed pelvis and a stunted growth. She had been four days in labor under the care of a midwife, and was finally the subject of a consultation at which a number of physicians and surgeons were present. The conjugate diameter of her pelvis measured a fraction over two inches, the index-finger striking the promontory of the sacrum in the ordinary line of introduction at a distance of 2⅓ inches from the pubic arch. She was in strong labor, the child alive, and waters long evacuated. Several skilful accoucheurs favored the Cæsarean operation; but the surgeon called upon to perform it declined, stating his belief that so soon as he should commence to incise the uterus its contractions would convert the wound into a rupture, and thus increase the risk to the patient. This plausible reasoning prevailed, and one of the accoucheurs perforated the child's head, and delivered it by making traction with a pair of Meigs' craniotomy forceps attached to the edge of the perforation, by which the head was elongated and gradually drawn through the pelvis. The woman made a rapid recovery. If any one will examine all the records of our American cases, he will find that in not one of them was a rupture induced by the knife of the operator; thus an error in reasoning was the means of preventing the

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performance of the Cæsarean operation in a case where it was obviously uncalled for, and where, from the duration of labor, there was very little reason to hope for a favorable termination.

Promptness of decision and action are all important, if success is to be secured as a result of gastro-hysterotomy. As soon as the deformity of the pelvis, or the nature and extent of the obstacle to delivery can be ascertained, it should be determined whether craniotomy, cranioclasm, or the Cæsarean operation should be resorted to; and if the last, it ought to be performed as early in the labor as possible, and for these reasons, viz.:

1st. Prolonged muscular action not only reduces the strength of the patient, but favors hemorrhage from the uterine incision, and the utero-placental sinuses, by the induction of muscular inertia and consequently the failure of prompt contraction after the removal of the fœtus.

2d. General exhaustion favors the production of a fatal result from shock, peritonitis, and septicæmia.

3d. The results of these operations which have been promptly performed in the United States show that where no attempt at forcible delivery has been made, and the section has been completed within twenty-four hours from the commencement of labor, gastro-hysterotomy is by no means as dangerous an operation as the general statistics would indicate.

4th. Experience teaches that where muscular exhaustion of the uterus has not been permitted to occur, the organ will usually contract firmly and permanently,

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thereby shortening the uterine incision to about two inches, and rendering a resort to the use of sutures in it seldom necessary, except for the arrest of hemorrhage where large vessels have been opened.

5th. Two prominent causes of peritonitis, viz., the escape of lochia, and effusion of blood into the abdominal cavity, are generally avoided by an early operation, as the uterine incision does not gape open, as in cases where muscular exhaustion has taken place.

Promptness of action is in one sense a relative term, and cannot be measured in all cases by hours, as labor is much more exhausting in a given time in some than in others, either from the violence of its character, or the previous physical state of the patient enduring it, so that what might be promptness in one case would be delay in another. This difference of the character of labor and the powers of endurance will account for the favorable results of some late operations, as compared with others earlier performed. The operation is at best a dangerous and uncertain one, but so also is ovariotomy, some women recovering under the most adverse circumstances, and others dying where there have been good reasons for anticipating a favorable result. But this very danger and uncertainty diminish to a marked degree in the average, where a series of cases have all been operated upon under conditions regarded as favorable to recovery. If the woman has been in good health prior to the commencement of labor, has a good and but slightly accelerated pulse, has not been operated upon by turning, craniotomy, or em-

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bryotomy, and does not appear exhausted by her own efforts at expulsion, she will in the majority of instances recover from gastro-hysterotomy. Perhaps it will be safe to say that in this country at least 66 per cent. of such women have recovered.

Of fifteen women operated upon during the *first day* of labor, ten recovered; fourteen of the children were delivered alive, one of whom being a monster, soon died, and another, the offspring of a sickly mother, also perished. Thus, in fifteen operations, ten women and twelve children were saved. The uterine suture was used in but one instance, a fibroid tumor in the line of the incision causing it to close imperfectly. These are not selected cases, but all that come within the time specified. I have good reason for believing that several other favorable cases were operated upon sufficiently early to be rated as *promptly performed*, but I prefer to limit the list to such as cannot be questioned. I should not consider a case of arm-presentation (with a contracted superior strait and impaction of the fœtus in the pelvis, the uterus empty of liquor amnii, and the woman making for hours violent expulsive efforts) to be promptly aided by the Cæsarean section, if performed near the close of the first day of labor, because by this time she may have been the greater portion of the day exhausting herself in fruitless efforts to expel the fœtus, the peculiar position of the child rapidly terminating the first pains of labor by the perforation of the membranes and evacuation of the amniotic fluid. Neither should we consider an operation to be long delayed, even if performed after the close of the first day of la-

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bor in all instances, for the tedious character of some labors is such that the function is scarcely established until many hours have passed by, and the patient is not materially exhausted, as evinced by her change of spirits, and the muscular power she evinces when her expulsive pains are brought to bear in extending the fœtus. The only true measure of promptness is a favorable condition of the patient at the time the operation is performed.

The general results of gastro-hysterotomy in the United States will be found to compare favorably with those reported by Dr. Charles F. Rodenstein, of Westchester, N. Y., in the number of this Journal for February, 1871, where he says: "I have collected the records of over four hundred cases which have been operated on since the beginning of this century; of these about 43 per cent. have terminated fatally to the mother."

According to the analysis of M. Pihan Dufeillay,* in

* I am inclined to regard this statement of Dufeillay as somewhat of an exaggeration; at least it is not a fair deduction from the cases which he collected, as shown from the fact that he confounds the Cæsarean operation with the abdominal section made for the removal of the fœtus already escaped into the peritoneal cavity through a rupture of the uterus, and writes of the performance of "hystérotomie" after such an accident, when the term is clearly a misnomer, as the knife does not touch the uterus, but merely opens the abdominal walls. If I had placed all such operations, the records of which have been sent me, to the credit of the Cæsarean section, the favorable results of gastro-hysterotomy would have been very much improved in my report. Under the most favorable deduction that can be made, from the promptly performed operations of the United States, which are in very small minority, we cannot claim a saving of more than from 70 to 73 per cent. of the women and children; and even this result can only be inferred from a mass of testimony in my possession, as yet in too imperfect a state for publication.

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the 18th vol., 5th Series, page 304, of the Archives Générales de Médecine, 81 per cent. of the women recovered, where the operation was resorted to early and before the strength of the patient had been exhausted by fruitless attempts to overcome the obstruction; while but 19 per cent. recovered where the operation was resorted to after a long and exhausting labor. Up to the year 1866, 89 per cent. of British Cæsarean cases had died; hence the very strong opposition to the operation which is almost universal among English obstetrical writers, and the great claims made by some of them for the almost general applicability of the cephalotribe in extreme pelvic deformities; witness for instance this opinion of Dr. Robert Barnes *: "I repeat with all the emphasis that conviction based upon experience dictates, that delivery by the natural passages, either by cephalotripsy, by the craniotomy forceps, or by my new method of embryotomy, if the conjugate diameter measures 1.50″, is perfectly practicable, and with a presumption of safety to the mother much greater than that attending the Cæsarean section. I am even confident that the same may be predicated with a conjugate diameter reduced to an inch and a quarter, or even an inch."

In view of the increased efficiency of the cephalotribe, Dr. J. Braxton Hicks says: † "With the various plans of late developed which are at command I consider there are few cases in which the head itself will give

* Robert Barnes' Lectures on Obstetrics, page 315. London, 1871.

† Trans. Obstet. Soc., London, 1870, page 127.

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insuperable trouble; the *body* is now the difficult element in the extremely severe obstacles."

Dr. Robert Greenhalgh, who has had considerable experience in gastro-hysterotomy as an operator and observer, and who has visited and seen some of the cases of Dr. Ludwig Winkel, thus expresses himself:* "I believe that craniotomy and extraction by the crochet or cephalotribe, in cases of extreme deformity of the pelvis, is more difficult and probably more fatal to the patient than the Cæsarean section; and moreover, by the latter operation, if timely performed, there is every probability that the child's life may be spared." No one has better described the dangers of craniotomy than Dr. Barnes, before quoted, and without here mentioning them for want of space, let me refer you to the London Medical Times for Nov. 14, 1868, or The Half-Yearly Abstract, for July, 1869, Phila., in which latter volume will also be found several valuable monographs by the same writer, bearing upon craniotomy and the Cæsarean operation.

Dr. Cleveland, in the London Obstetrical Transactions,† page 128, reports a case in point, upon the difficulty with the body, referred to by Dr. Hicks, where after removing the fœtal head and all the cervical vertebra, he was foiled in the attempt to bring down the body within operative reach.

Dr. Robert Dyce expresses my own views when he says:‡ "I am quite satisfied that each case of extreme

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* Op. cit., 1865. † For 1870.

‡ Edinburgh Med. Jour., vol. ii., part 2, 1862.

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deformity must in great measure be treated less on a general principle than on its own individual peculiarities, and that such and such measurement should not be held exclusively as indications for the Cæsarean operation, irrespective of collateral circumstances."

I close my quotations of English authorities with the language of Dr. John Burns, an old writer, but still applicable at the present time: "It is one thing to extract, and another to extract safely, in extreme deformity." . . . "We ought to be satisfied not only that we can bring through the child, but that we can do so without so much violence as must in all probability kill the mother." . . . "I question much if extreme cases be not as dangerous to the patient as the Cæsarean operation; they are certainly more painful." (Principles of Midwifery. London, 1837.)

I feel that I cannot give a better American opinion upon the relative values of gastro-hysterotomy and embryotomy, than that expressed to me in a letter lately received from Dr. Charles S. Mills, of Richmond, Virginia, who has twice performed the Cæsarean section. He writes: "Having witnessed the fatal results in a great many cases of embryotomy, none of which have ever been made known to the profession, to say nothing of injury inflicted on the patient, entailing in many subjects a miserable state of existence to which death would be preferable, I am decided in the opinion that in most cases in which craniotomy or embryotomy is resorted to in consequence of physical deformity, the preferable operation, and least hazardous to both mother and child, would be gastro-hysterotomy, resorted to as

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soon as its necessity is ascertained, rapidly performed, and with as little exposure as possible of the abdominal organs, and vigilant attention to the patient afterward."

Prof. Hugh L. Hodge, in his "Obstetrics," page 281, says, with reference to the *question of delay:* "Deferring the operation to a late period of labor has been probably one important reason why the Cæsarean section has so often terminated fatally to the mother and her infant. On the contrary, if it be resorted to before the child or the parent have been injured by unavailing efforts at delivery, and especially before the membranes are ruptured, while the moral and physical being of the mother are in good condition, and when there are no symptoms of inflammation, fever, or exhaustion, strong hopes may be entertained for the salvation of both the mother and the child." Page 284: "The hope also may be entertained that if the patient be in good condition mentally and physically, and if the deformity of the pelvis be ascertained previous to the occurrence of labor, so that suitable preparations can be made for the operation, gastro-hysterotomy will prove far more successful than in times past, and perhaps may be justified even in cases of moderate deformity when the child is alive, for the purpose of preserving its life, as well as that of its mother."

For the mode of performing the operation, see Hodge's Principles and Practice of Obstetrics, in which the steps are very simply and accurately given by one who was present at Dr. Gibson's second successful operation upon Mrs. Reybold, of this city.

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The following are the causes, so far as stated, which have been assigned as necessitating the performance of gastro-hysterotomy in this country:

	Cases.
1. Deformities of the pelvis; in almost all instances the result of rickets in childhood, but in no case the effect of malacosteon	32
2. Occlusions, or constrictions of the os uteri, vagina, or both, the results of previous disease, with other complications	8
3. Pelvic exostosis; generally from the sacrum, and the result of syphilitic disease	5
4. Transverse position of the fœtus, and its impaction in the pelvis, for want of proper timely assistance	5
5. Large fibrous tumors occupying the pelvic cavity	2
6. Ventral hernia, with os uteri displaced and beyond reach	1
7. Combined extra and intra-uterine pregnancy, the former concealing the latter, until after making the abdominal section	1
8. Constriction of the body of the uterus, retaining the fœtal head, and preventing the forcible delivery of the child by traction on the feet	1

In performing the operation of gastro-hysterotomy in this country, the abdominal incision has in nearly all the cases been made directly through the linea alba, and the uterine opening in front, between the cervix and fundus. Other plans of incision have been proposed, especially by European surgeons, for the uterus, with a view to favor a better closure and union; and sutures of various materials and characters have been devised and used in the abdominal, and sometimes in

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the uterine wound; but in my judgment there is no plan of operation or suture, which can compensate for the almost criminal hesitancy and delay, which are a marked feature in the history of Cæsarean cases. The simple central incision made in the first stage of labor, whilst the woman is still strong and her infant unmutilated, is better than all the more complicated plans devised to avoid the injurious effects of delay. There may be some cases where the uterine wound should be united, under pressure by sutures, to avoid hemorrhage, and gaping, even under the most favorable circumstances, as to time and condition; but these are exceptional ones, as is that reported by Prof. Sager* in the "abstract," where sutures were used to prevent hemorrhage and the gaping caused by the presence of a small fibroid tumor directly in the line of the incision. The question of uterine and peritoneal toleration, in the case of suturing the uterus, has yet to be decided: that it appears important as a measure necessary to insure recovery in some instances cannot be denied; neither can it be said that it would not be an improvement, provided it could be shown not to favor inflammation, and that after union it would occasion no future trouble.

In but six cases operated upon in this country have sutures been used, all of which but one were late operations, and the exception was a deformed cripple, who soon died from shock resulting from hemorrhage and escape of lochia into the abdomen, notwithstanding the

* See Abstract of Cases in next number of this Journal.

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use of sutures to prevent the gaping of the uterine incision. Two of the five late cases still live, one having six silver sutures in her womb, and the other five linen ones, where they have remained, according to very recent reports received by letter, for nearly four years without producing any inconvenience. In one of these cases, viz., that of Mad. Despretz, it hardly seems possible, from reading the record, that she could have recovered without this artificial closure of the uterine wound, which did not shorten and gaped wide ly, falling in on one side. The question of the safety of such sutures has been fully discussed in a paper by Dr. Charles F. Rodenstein, of Westchester County, N. Y., in the February number of the American Journal of Obstetrics for 1871, page 577, in which he advocates their use as a preventive of secondary gaping of the uterine wound and the escape of the discharges into the peritoneal cavity, as well as for the arrest of primary hemorrhage. I am not aware of any form of removable uninterrupted uterine suture having ever been used in this country. Judging from the results of eleven cases in which I find that sutures have been used, I am disposed to believe that they do not materially add to the gravity of the operation, as five of the women recovered. It is a matter for future determination, whether the tendency of the suture to produce inflammation is not much more than counterbalanced by its arresting hemorrhage and the escape of noxious discharges into the peritoneal cavity, as well as the prevention of visceral strangulation of the wound.

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In concluding the introductory part of this paper, I regret to find that after eight months of diligent search, the statistical portion is still far from perfect or complete, in points wherein I have expended the greatest amount of care and labor. To give this in all respects an impartial character has been my aim from the beginning, and I have endeavored with every degree of care to render the statistical work as fair in its representations as possible, by presenting a record of every obtainable case, published and unpublished. I had hoped to have presented at this time a finished tabular statement, embracing all the cases of gastro-hysterotomy of every grade possible to collect; but recently received letters have indicated other lines of search, and increased my anxiety to fill up records long since imperfectly received, so that I am inclined to withhold its publication until a future time, especially as I know sufficient of the incomplete returns to satisfy me as to their importance in the general result. But for the delay incident to making researches by means of correspondence through so vast a country as ours, I should have long since finished my task, and I feel now that it is perhaps better to postpone the concluding tables than to publish them in an imperfect form.

No one State in the Union probably equals Louisiana in the number of Cæsarean operations, their successful results, or the early period of their history. That the operation was performed a number of times with success in the early part of this century, prior to any of the cases I have here recorded, there is every reason to believe; in fact, it is highly probable that the Louisi-

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ana operations constitute a fifth of the whole credit of the Union. It is true that I present but 8 cases, seven of which recovered, and one died, with a saving of one-half of the children; but there is good reason to believe that this number might with propriety be extended to 15 cases, with but two deaths, and that even this does not represent the full complement of operations that have been performed. I have searched the French medical periodicals of the years in question, and through the kindness of Dr. S. M. Bemiss, of New Orleans, have also made a thorough canvass of the State; but beyond the eight cases, we have not been able to find any which may be definitely reported, as they unfortunately belong to the dead past, and I fear can never be brought to life. We made a very special search after the records of seven operations said to have been performed upon the same woman, the last one fatal, by Dr. Prevost, of Donaldsonville, some forty to fifty years ago, but to no avail.

If we calculate the risks of gastro-hysterotomy in this country from the cases operated upon in cities and large towns, or by their surgeons in their immediate vicinity, giving them all the advantages that skill and service can command, we find that 60 per cent. of the women recovered, or 15 out of 25. Nine of these 25 were operated upon with a reasonable degree of promptness, calculated as to time and condition; of these, 7 recovered, and the same number of children were saved. All of the nine children were alive when delivered. The *whole mortality* among the children, owing to the

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TABULAR SUMMARY OF CÆSAREAN OPERATIONS IN U. S.

No.	Year.	Locality.	Age.	Color.	Cause of Difficulty.	Name of Operator.	Result to Woman.	Result to Child.	Cause of Death, Woman.	Cause of Death, Child.	Duration of Labor before Operation.
1	1822	Nassau, N. Y.	14	Black.	Not any.	Girl, herself.	Recovered	Not stated			A few hours.
2	1827	Newton, Ohio	..	White	Vaginal contraction and eclampsia.	Dr. J. L. Richmond	"	Lost		Loins cut across in delivery.	34 hours.
3	1828	Occoquan, Va.	25	Black.	Vaginal occlusion.	A country charlatan	Died.	"	Peritonitis	Long labor	At intervals for 12 or 18 mos.
4	1832	Northumberland, Pa.	..	White	Deformed pelvis.	Drs. Dougal and Van Valzah.	"	"	"	Craniotomy	Over a day.
5	1833	Columbiana Co., Ohio	23	"	" "	Dr. Robert Estep	Recovered	"		Long labor and decapitation.	Performed late.
6	1834	" "	24	"	" "	" " "	"	"		Cross-birth.	" "
7	1835	Philadelphia, Pa.	26	"	" "	" William Gibson	"	Saved			A few hours.
8	1835		31	"	" "	" A. Brooke	Died.	Lost	Peritonitis	Uterine pressure	5½ days.
9	1837	Carroll Co., Tenn.	..	"	Vaginal contraction and rigid os uteri.	" John Travis.	"	Saved	"		Over 4 days.
10	1837	Philadelphia, Pa.	28	"	Deformed pelvis.	" William Gibson	Recovered	"			A few hours.
11	1838	New York City	42	"	" "	" R. K. Hoffman	"	Lost		Feeble & deformed.	24 hours.
12	1838	North of N. O., La.	..	Black.	Not any.	A drunken negress	"	Saved			Less than a day.
13	1840	Hamilton, Ohio	..	White	Deformed pelvis.	Dr. Cyrus Falconer	Died.	"	Peritonitis		" "
14	1845	Cortland Co., N. Y.	41	"	Fibrous tumor.	" Azariah B. Shipman	"	Lost	Shock	Long labor	Several days.
15	1845	Fredericksburg, Va.	30	"	Rigid os uteri following peritonitis.	" Brodie S. Herndon	Recovered	"		" "	Irregularly for 6 weeks.
16	1846	Thibodeaux, La.	30	Black.	Exostosis	" J. A. Scudday	"	"		After delivery	19 hours.
17	1847	Mt. Vernon, Ind.	26	White	"	" Wm. H. Byford	Died.	"	Peritonitis	Long labor	3 days.
18	1848	Wilcox Co., Ala.	..	Black.		" Zaoch. Nettles	Recovered	Saved			
19	1849	Thibodeaux, La.	33	"	Exostosis	" J. A. Scudday	"	"			A few hours.
20	1849	St. James, La.	..	"	"	" Thomas Cottman	"	Lost		Craniotomy	Over a day.
21	1849	Richmond, Miss.	..	"	Ventral hernia	" B. Harvey	Died in 3 weeks.	Saved	Irritative fever		Several hours.
22	1850	Opelousas, La.	22	"	Deformed pelvis.	" Vincent Boagni	Recovered	Lost		Long labor	Over 2 days.
23	1850	Near Bethlehem, Pa.	31	"	" "	" Benj. Wilhelm	"	"		" "	2 days.
24	1851	Perry Co., Ala.	18	"	" "	Drs. E. R. Schowalter and M. Langhorne	Died.	"	Exhaustion and convulsions.	" "	72 hours.
25	1851	Bayou Sara, La.	25	"	Occlusion of os uteri.	Dr. David B. Gorham	Recovered	Saved			48 hours.
26	1852	Oktibbeha, Miss.	24	"	Deformed pelvis.	" Wm. H. Meriwar	"	Lost		Long labor	5 days.
27	1852	Fayetteville, N. C.	21	White	Arm presentation.	Drs. Mallett and McSwain.	"	"			Performed late.
28	1853	——, Ala.	17	Black.	Deformed pelvis.	Dr. J. W. Crawford	Died.	"	Exhaustion	Long labor	50 hours.

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29	1854	Oktibbeha, Miss.	26	Black.	Deformed pelvis	Dr. Wm. H. Merinar	Recovered	Saved				Before rupt. membranes.
30	1855	Eastville, Va.	25	"	Vaginal occlusion	" Wm. G. Smith	Died	"	Exhaustion			Over a day.
31	1855	Corning, N. Y.	26	White	Deformed pelvis	" Joshua B. Graves	"	"	Perforation of vagina and rectum.			4 days.
32	1855	Oktibbeha, Miss.	27	Black.	" "	" Wm. H. Merinar	"	"	Peritonitis			A few hours.
33	1856	Richmond, Va.	..	"	" "	" Edward Drew	"	"				
34	1856	" "	28	"	" "	" Charles S. Mills	Recovered	"				Actively 4½ hrs.
35	1856	Wilcox Co., Ala.	19	"	" "	Drs. A. C. Matheson and Gaillard.	Died	Lost	Exhaustion	Long labor		2 or 3 days.
36	1857	New Orleans, La.	..		" "	Dr. Langenbecker	"	Saved.				
37	1857	Council Bluffs, Iowa.	20	White	" "	" Wm. F. McLelland.	Recovered	"				Perform'd early.
38	1857	San Francisco, Cal.	36	"	" "	" Elias S. Cooper	"	Lost		Long labor		61 hours.
39	1857	Lawrenceville, Ga.	28	"	" "	" A. J. Shaffer	Died	"	Peritonitis	Craniotomy		42 hours.
40	1860	Florence, Ala.	27	"	Transverse position.	" James W. Stewart.	Recovered	"		Uterine pressure		Over 30 hours.
41	1860	New York City	38	"	Exostosis	" B. Fordyce Barker.	Died	Saved	Peritonitis			2 days.
42	1861	Hamburg, Ark.	..	Black.	Deformed pelvis	" L. J. Newton	Recovered	"				A few hours.
43	1862	Matamoras, Ind.	..			" H. Case	"	Lost				
44	1862	St. Louis, Miss.	32	White	Arm presentation	" Charles A. Pope	Died	"	Exhaustion	Transverse position and uterine pressure.		26 hours.
45	1863	Jefferson Co., Ind.	..	"	Fibrous tumor	" J. W. Conway	Recovered	"		Not stated		14 hours.
46	1866	Burnt Corn, Ala.	35	"	Shoulder presentation	" R. Fowler	"	"		Embryulcia		60 hours.
47	1866	Westchester Co. N.Y.	39	"	Arm "	" G. J. Fisher	Died	"	Exhaustion following fright and excitement.	Uterine pressure		After exhaustion.
48	1867	Pittsfield, Mass.	28	"	Deformed pelvis	" Wm. Warr'n Greene	Recovered	Saved				26 hours.
49	1867	Richmond, Va.	34	Black.	" "	" Charles S. Mills	Died	Lost	Pre-existing peritonitis.	Asthenia and malformation.		Nearly 2 days.
50	1867	New Haven, Conn.	18	"	" "	" T. Beers Townsend.	Recovered	Saved				62½ hours.
51	1867	New Orleans, La.	23	White	Occlusion of vagina and os uteri.	" H. C. D'Aquin	"	Lost		Craniotomy		10 days.
52	1868	Mobile, Ala.	19	Black.	Deformed pelvis	" J. T. Gilmore	Died	"	Peritonitis	Uterine pressure		Over 2 days.
53	1869	Aberdeen, Miss.	22	"	Extra and intra uterine pregnancy combined.	" E. Paul Sale	"	2 Saved	Septicæmia			Extra - uterine pains for 4 or 5 weeks.
54	1869	Philadelphia, Pa.	31	White	Deformed pelvis	" Walter F Atlee	"	"	Visceral obstruct'n			A few hours.
55	1869	Edgefield, S. C.	32	Black.	Contracted vagina	" Walter Hill	Recovered	"				56 hours.
56	1869	Baltimore, Md.	26	"	Deformed pelvis	" James W. Butler	Died	Lost	Peritonitis	Craniotomy		Performed late.
57	1869	Ann Arbor, Mich.	35	White	" "	" Abram Sager	"	Saved	Secondary shock			8 or 9 hours.
58	1870	Kingsbridge, N. Y.	40	"	" "	" P. De Marmon	"	"	Metro-peritonitis			44 hours.
59	1870	Portland, Me.	40	"	Convulsions, and constriction of uterus.	" T. A. Foster	"	Lost	Albuminuria, convulsions, and exhaustion.	Uræmic poisoning.		Irregularly for 2 weeks.

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TABULAR SUMMARY OF CÆSAREAN OPERATIONS IN U. S.

No.	Year.	Locality.	Age.	Color.	Cause of Difficulty.	Name of Operator.	Result to Woman.	Result to Child.	Cause of Death, Woman.	Cause of Death, Child.	Duration of Labor before Operation.
1	1822	Nassau, N. Y.	14	Black.	Not any.	Girl, herself.	Recovered	Not stated			A few hours.
2	1827	Newton, Ohio	..	White	Vaginal contraction and eclampsia.	Dr. J. L. Richmond	"	Lost		Loins cut across in delivery.	34 hours.
3	1828	Occoquan, Va.	25	Black.	Vaginal occlusion.	A country charlatan	Died.	"	Peritonitis	Long labor.	At intervals for 12 or 15 mos.
4	1832	Northumberland, Pa.	..	White	Deformed pelvis.	Drs. Dougal and Van Valzah.	"	"	"	Craniotomy	Over a day.
5	1833	Columbiana Co., Ohio	23	"	" "	Dr. Robert Estep	Recovered	"		Long labor and decapitation.	Performed late.
6	1834	" "	24	"	" "	" " "	"	"		Cross-birth.	" "
7	1835	Philadelphia, Pa	26	"	" "	" William Gibson	"	Saved			A few hours.
8	1835		31	"	" "	" A. Brooke	Died.	Lost	Peritonitis	Uterine pressure	3½ days.
9	1837	Carroll Co., Tenn	..	"	Vaginal contraction and rigid os uteri.	" John Travis.	"	Saved	"		Over 2 days.
10	1837	Philadelphia, Pa.	28	"	Deformed pelvis.	" William Gibson	Recovered	"			A few hours.
11	1838	New York City	42	"	" "	" R. K. Hoffman	"	Lost		Feeble & deformed.	24 hours.
12	1838	North of N. O., La.	..	Black.	Not any.	A drunken negress	"	Saved			Less than a day.
13	1840	Hamilton, Ohio	..	White	Deformed pelvis.	Dr. Cyrus Falconer	Died.	"	Peritonitis		" "
14	1845	Cortland Co., N. Y.	41	"	Fibrous tumor.	" Azariah B. Shipman	"	Lost	Shock	Long labor	Several days.
15	1845	Fredericksburg, Va.	30	"	Rigid os uteri following peritonitis.	" Brodie S. Herndon.	Recovered	"		" "	Irregularly for 6 weeks.
16	1846	Thibodeaux, La.	30	Black.	Exostosis	" J. A. Scudday	"	"		After delivery.	12 hours.
17	1847	Mt. Vernon, Ind.	26	White	"	" Wm. H. Byford.	Died.	"	Peritonitis	Long labor	3 days.
18	1848	Wilcox Co., Ala.	..	Black.		" Zacch. Nettles	Recovered	Saved			
19	1849	Thibodeaux, La.	33	"	Exostosis	" J. A. Scudday	"	"			A few hours.
20	1849	St. James, La.	..	"	"	" Thomas Cottman.	"	Lost		Craniotomy	Over a day.
21	1849	Richmond, Miss.	..	"	Ventral hernia	" B. Harvey	Died in 3 weeks.	Saved	Irritative fever		Several hours
22	1850	Opelousas, La.	22	"	Deformed pelvis.	" Vincent Boagul.	Recovered	Lost		Long labor	Over 2 days.
23	1850	Near Bethlehem, Pa.	31	"	" "	" Benj. Wilhelm.	"	"		" "	2 days.
24	1851	Perry Co., Ala.	18	"	" "	Drs. E. R. Schowalter and M. Langhorne	Died.	"	Exhaustion and convulsions.	" "	72 hours.
25	1851	Bayou Sara, La.	25	"	Occlusion of os uteri.	Dr. David B. Gorham.	Recovered	Saved			48 hours.
26	1852	Okhibbeha, Miss.	34	"	Deformed pelvis.	" Wm. H. Merinar.	"	Lost		Long labor	3 days.
27	1852	Fayettville, N. C.	21	White	Arm presentation.	Drs. Mallett and McSwain.	"	"			Performed late.
28	1853	——, Ala	17	Black.	Deformed pelvis.	Dr. J. W. Crawford	Died.	"	Exhaustion	Long labor	50 hours.

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29	1854	Oktibbeha, Miss.	26	Black.	Deformed pelvis	Dr. Wm. H. Merinar	Recovered	Saved				Before rupt. membranes.
30	1855	Eastville, Va.	25	"	Vaginal occlusion	" Wm. G. Smith	Died	"	Exhaustion			Over a day.
31	1855	Corning, N. Y.	26	White	Deformed pelvis	" Joshua B. Graves	"	"	Perforation of vagina and rectum.			4 days.
32	1855	Oktibbeha, Miss.	27	Black.	" "	" Wm. H. Merinar	"	"	Peritonitis			A few hours.
33	1856	Richmond, Va.	..	"	" "	" Edward Drew	"	"				
34	1856	" "	23	"	" "	" Charles S. Mills	Recovered	"				Actively 4½ hrs.
35	1856	Wilcox Co., Ala.	19	"	" "	Drs. A. C. Matheson and Gaillard.	Died	Lost	Exhaustion	Long labor		2 or 3 days.
36	1857	New Orleans, La.	..		" "	Dr. Langenbecker	"	Saved.				
37	1857	Council Bluffs, Iowa.	20	White	" "	" Wm. F. McLelland.	Recovered	"				Perform'd early.
38	1857	San Francisco, Cal.	36	"	" "	" Elias S. Cooper	"	Lost		Long labor		61 hours.
39	1857	Lawrenceville, Ga.	28	"	" "	" A. J. Shaffer	Died	"	Peritonitis	Craniotomy		42 hours.
40	1860	Florence, Ala.	27	"	Transverse position.	" James W. Stewart.	Recovered	"		Uterine pressure		Over 30 hours.
41	1860	New York City	38	"	Exostosis	" B. Fordyce Barker.	Died	Saved	Peritonitis			2 days.
42	1861	Hamburg, Ark.	..	Black.	Deformed pelvis	" I. J. Newton	Recovered	"				A few hours.
43	1862	Matamoras, Ind.	..			" H. Case	"	Lost				
44	1862	St. Louis, Miss.	32	White	Arm presentation	" Charles A. Pope	Died	"	Exhaustion	Transverse position and uterine pressure.		26 hours.
45	1863	Jefferson Co., Ind.	..	"	Fibrous tumor	" J. W. Conway	Recovered	"		Not stated		14 hours.
46	1866	Burnt Corn, Ala.	35	"	Shoulder presentation	" R. Fowler	"	"		Embryulcia		60 hours.
47	1866	Westchester Co. N.Y.	39	"	Arm "	" G. J. Fisher	Died	"	Exhaustion following fright and excitement.	Uterine pressure		After exhaustion.
48	1867	Pittsfield, Mass.	28	"	Deformed pelvis	" Wm. Warr'n Greene	Recovered	Saved				26 hours.
49	1867	Richmond, Va.	34	Black.	" "	" Charles S. Mills	Died	Lost	Pre-existing peritonitis.	Asthenia and malformation.		Nearly 2 days.
50	1867	New Haven, Conn.	18	"	" "	" T. Beers Townsend.	Recovered	Saved				62½ hours.
51	1867	New Orleans, La.	23	White	Occlusion of vagina and os uteri.	" H. C. D'Aquin	"	Lost		Craniotomy		10 days.
52	1868	Mobile, Ala.	19	Black.	Deformed pelvis	" J. T. Gilmore	Died	"	Peritonitis	Uterine pressure		Over 2 days.
53	1869	Aberdeen, Miss.	22	"	Extra and intra uterine pregnancy combined.	" E. Paul Sale	"	2 Saved	Septicæmia			Extra - uterine pains for 4 or 5 weeks.
54	1869	Philadelphia, Pa.	31	White	Deformed pelvis	" Walter F Atlee	"	"	Visceral obstruct'n			A few hours.
55	1869	Edgefield, S. C.	32	Black.	Contracted vagina	" Walter Hill	Recovered	"				56 hours.
56	1869	Baltimore, Md.	26	"	Deformed pelvis	" James W. Butler	Died	Lost	Peritonitis	Craniotomy		Performed late.
57	1869	Ann Arbor, Mich.	35	White	" "	" Abram Sager	"	Saved	Secondary shock			8 or 9 hours.
58	1870	Kingsbridge, N. Y.	40	"	" "	" P. De Marmon	"	"	Metro-peritonitis			44 hours.
59	1870	Portland, Me.	40	"	Convulsions, and constriction of uterus.	" T. A. Foster	"	Lost	Albuminuria, convulsions, and exhaustion.	Uræmic poisoning		Irregularly for 2 weeks.

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gravity of the delayed cases, amounted to 56 per cent. or 14 out of 25.

APPENDIX.

TABULAR SUMMARY OF THE CÆSAREAN OPERATIONS PERFORMED IN THE UNITED STATES.

UPON more mature deliberation, I have concluded to publish the summary as far as completed at this time, especially as the abstract of cases will not appear until the next number of this journal. As my researches by the aid of correspondents are as yet by no means ended, I hope at a future day to furnish a table as complete in all points as it may be in my power to make it. Although I cannot at this time give the important points of more than 59 cases, I have discovered the localities and operators of about 70, 39 of which, or nearly 56 per cent., recovered. Of the 59 cases presented in the accompanying table, it will be seen that 52 per cent. recovered, and 48 died. The *color* of the women has been noted in 57 cases, of which 30 were whites, and 27 blacks. Of the former, 15 recovered and 15 died; of the latter 15 recovered and 12 died. Twelve white children were saved and 17 perished, against 14 blacks saved to 13 lost. This greater mortality in the white children goes to show that the preponderance of loss in the white women was due rather to the gravity of their cases prior to the operation, than to any ethnological cause, as might be presumed to occasion it. Almost all the cases are from the lower walks of life.

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DEFORMITIES OF THE PELVIS.—THEIR ORIGIN AND TYPICAL CHARACTER.

By ROBERT P. HARRIS, M.D., PHILADELPHIA.

(Read before the Philadelphia Obstetrical Society, October 5th, 1871.)

ALTHOUGH the deformities of the female pelvis are exceedingly diverse in many minor points, still they will admit of being arranged under general and special heads, based either upon a uniformity of origin, or a marked similarity of contour in the superior strait. If we examine a large number of contracted and collapsed pelves, we shall find certain general characteristics, that mark almost unerringly the nature of the disease in which the deformity originated. The great mass of the cases arise either from infantile or adult bone-softening, and in our own country almost exclusively from the former. Rachitis and malacosteon bear a close pathological relationship to each other, but occurring at remote periods of life, produce very different effects, as a general rule, upon the contour of the pelvis, and give rise to two general classes, which may be denominated reniform or kidney-shaped, and rostrate, or beaked, the former being produced by antero-posterior collapse, and the latter by postero-lateral. In the great majority of rachitic pelves, the reniform contour of the superior strait is well marked, and the chief obstacle exists in the shortening of the conjugate diameter. Rostration does sometimes occur from rachitis in older children, and in rare instances may be found associated with a reniform strait, as the result

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of malacosteon, but these are marked exceptions to the general rule. In the extreme collapse of the pelvis which results from long-continued rachitis in very young subjects, or malacosteon in its last stage, we have in the former generally only an antero-posterior closure, and in the latter a postero-lateral; but in some exceptional cases, this *trifoliation* may occur in the former, as I believe it does universally in the latter, in walking subjects.

The term "deformed," as applied to the pelvis, has been used by obstetrical writers in a very general sense, and made to include not only those abnormal in shape, but such as, properly speaking, present no deformity whatever, there being simply a deficient or excessive development, readily corrected by a proportionate growth of the fœtus. A truly deformed pelvis is one which, with rare exceptions, has been altered from its original shape by diseased action and mechanical pressure; and to this definition I propose to confine my remarks, excluding the simply *dwarfed* and *enormous* as well as those occluded by exostosis.

The reniform contraction arises in rachitis from the bending in of the posterior part of the superior strait, and the widening out of the anterior, the shape being determined by the extent of softening acted upon by the position in nursing and decubitus, or by some peculiar motion in the act of creeping. The cordiform variety is a modification of the reniform, in which the anterior portion of the strait presents a rounded angle, instead of a long curve. Rostration is an early step in malacosteon, but is rarely to be met with in

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rachitis, although it does occur, particularly when the child walks about whilst the bones are in their pliant state. The cordiform strait may thus be converted by postero-lateral pressure into the "trifoliate, or trilateral incurved," the usual character of the final collapse in adult softening. But the *trifoliation* of rachitis and malacosteon are very clearly different in most instances, sufficiently to mark the origin of the deformity. *Lordosis*, or the bending in of the spinal column, is a common attendant of rachitic deformity, and greatly adds to the difficulties of parturition. It is generally associated with a forcing forward and downward of the promontory of the sacrum, and an elevation of the anterior portion of the pelvis, although in some cases the whole pelvis is carried backwards, causing the plane of the superior strait to become nearly vertical.

Spondylolisthesis is sometimes compounded with lordosis, although entirely different from it, and may exist without any deformity of the sacrum or innominata. It consists in the overriding of the fifth lumbar vertebra upon the anterior face of the sacrum, by which the body of the vertebra is made to protrude into the pelvis, or to rest upon the anterior face of the sacral promontory, which becomes flattened for its accommodation. In some cases the sacrum becomes very much bent upon itself, and the third, fourth, and fifth lumbar vertebræ are all seated in the pelvis, anteverting the uterus and greatly obstructing the superior strait, so as in some instances to render the Cæsarean operation imperative. Even when unaccompanied with pelvic

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deformity, this displacement of the vertebræ is a serious obstacle to parturition. Extreme hollowness of the back, prominence of the chest, and protrusion of the abdomen, are characteristic indications of this condition.

Rachitis is hereditary to some extent, and unquestionably in some cases congenital; but it is as yet undetermined whether or not deformity commences in utero, although mothers have frequently expressed the opinion that their children were born with pelvic distortion. In the normal position of the fœtus the limbs are suspended from the acetabula, and the lumbo-pelvic curve straightened, the weight of the legs having a tendency to elongate the superior strait antero-posteriorly, which is the reverse of the reniform change usually produced by rachitis, and in correspondence with the normal shape of the fœtal pelvis.

Malacosteon commences in the adult with pains in the bones, and admits of locomotion for a longer or shorter period, during which the pelvis gradually yields to a collapsing pressure at three points, produced by the weight of the body acting through the spine, and the resistance of the ossa femora bearing on the acetabula. The first step generally in the resulting deformity is the forcing of the acetabula to approach each other, and thus rostrate the superior strait, by bringing the ossa pubis near together. The disease being progressive, and generally incurable, advances gradually in its distorting influence, until not only is rostration complete, but collapse of the entire pelvis results, even to the closure of the rectum, to be hereafter referred to. As

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an evidence of the prevalence of rachitis as compared with malacosteon, it may be stated that 402 cases of pelvic deformity resulting from the former, to one case of the latter, occurred in the service of the "Clinique d'Accouchements" at Paris, during sixteen years, as reported by Dr. G. C. Stanesco* (1869), in his work upon contractions of the pelvis.

We have mentioned four general varieties of pelvic deformity, viz.: *Reniform*, *Cordiform*, *Trifoliate*, and *Rostrate*, which might be subdivided into a number of others, but all resolvable into one or other of the four, the main distinction being due to excess, or irregularity of collapse. Perfectly symmetrical examples of the four may be found, but they are very rare as compared with those of an irregular type. As the diseases which produce softening of the skeleton attack the bones with irregular degrees of violence, so we may expect to find them irregularly distorted as a result.

Three other forms of pelvic deformity exist, which are not properly due to bone softening, viz.:—1. "The Transversely Contracted Pelvis," described by Robert. 2. "The Oblique-ovate," described by Naegele. 3. "The Oblique Cordiform," resulting from coxalgic anchylosis on one side.

Numbers 1 and 2 result from the same producing cause, which, after much research and discussion, is believed to be an early anchylosis of the sacro-iliac symphysis, on both sides in the first variety, and on one in the second. The provision for the growth and development of bones by means of sutures, symphyses, and epi-

* Recherches Cliniques sur les Rétrécissements du Bassin. Paris. 1869.

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physes, renders it very important that they should not be closed or consolidated until after the maturity of development, and an examination into their uses will readily demonstrate the inevitable effects of their early destruction upon the bones involved. The pelvis investigated by Robert is of long, symmetrical, cordiform shape, as will be seen by the illustration given; and that of Naegele somewhat similar to it on one side, but much more developed, as a compensation for the contraction upon the other. During the sixteen years of service at the Clinique des Accouchements in Paris, before referred to, there were three women delivered at the institution deformed by coxalgia, resulting in anchylosis.

In the transversely contracted and oblique-ovate pelves, the deformity is most marked at the inferior strait. The superior strait of the latter, from the increased growth of the os innominatum on the sound side, is frequently of nearly or quite normal capacity, whilst the inferior is contracted transversely in both varieties. In the oblique-cordiform pelvis of coxalgia, there is not only marked flattening on the affected side, but deflection of the superior strait towards the sound side, and not infrequently defective development of the whole pelvis. In the French report referred to, all of the children were delivered alive.

In illustrating these remarks upon the types of deformities, I select several characteristic examples from a large collection of drawings in my possession, taken from marked specimens of pelvic deformity, many of which have attained a historic reputation. (*See illustrations.*)

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PLATE I.

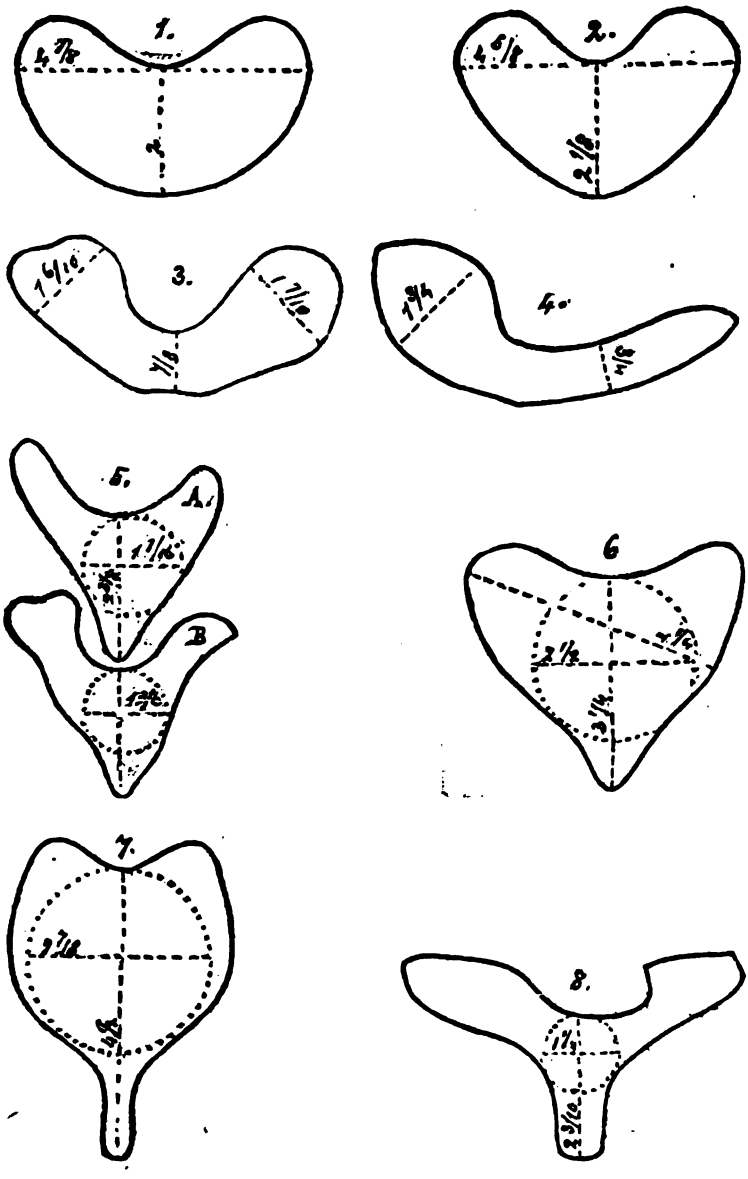

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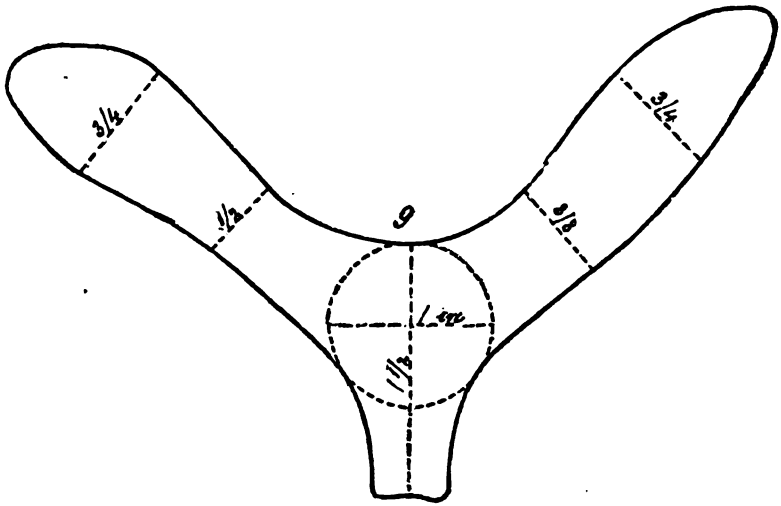
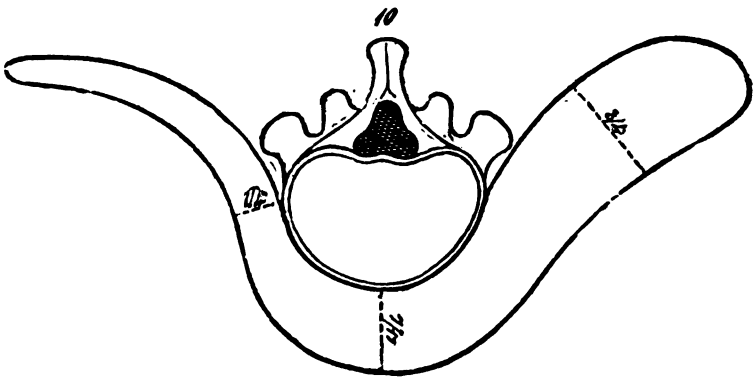
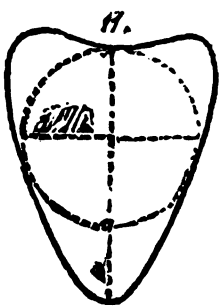
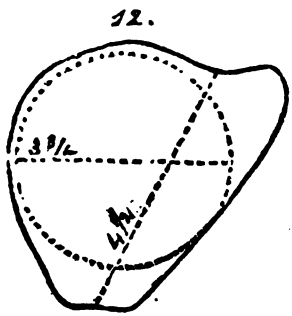
PLATE II.









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No. 1 represents a symmetrical reniform pelvis, an unusually regular specimen of the variety which is apt to be very much out of proportion in the two sides. The sketch is drawn to a scale of one-third, and was taken originally from the pelvis of Isabel King, aged 23, four feet high, operated upon by the Cæsarean section at St. Nicholas Poor-House, Aberdeen, Scotland, in 1862, by Prof. Robert Dyce. Turning was first attempted, then craniotomy performed, and all the skull removed but its base and a portion of the occiput, when it was found impossible to draw out the fœtus, it being retained by a constriction in the uterus. The woman died in 43 hours after the Cæsarean operation was performed.*

No. 2 was copied from a symmetrical cordiform pelvis in the Wistar Museum of the University of Pennsylvania, and, like No. 1, was taken from a dwarf woman. The ossa femora measure 8 inches in length, and the superior pelvis between the cristæ ilii but 8½ inches. This form of pelvis might be regarded as simply a modification of the reniform, if it was not for the fact that it is subject to postero-lateral pressure and bending in at the acetabula, whilst the reniform is generally collapsed only from behind forward, as in No. 3.

No. 3 is an example of the irregular reniform strait, sometimes called the "dumb-bell" variety, particularly when the ossa pubis bend in to meet the sacrum in nearly equal ratio—a form of contraction which is exceedingly rare. The sketch represents in outline

* Edinburgh Med. Jour., 1862, p. 895.

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the superior strait of the pelvis of Martha Rhodes, aged 23, four feet four inches high, who was operated upon by Gastro-hysterotomy in London, 1799, by Dr. William Cooper, and died in four hours. Her inferior strait measured $2\frac{3}{8}$ inches in the conjugate diameter, and $4\frac{3}{8}$ in the transverse. The child was delivered alive, and lived one day.*

No. 4 represents the superior strait of a reniform pelvis in an advanced stage of antero-posterior compression, the collapse having been most nearly effected upon the left side. The original drawing was taken by measurement from the pelvis of Elizabeth Sherwood, who was delivered by Dr. William Osborn, at the Store Street Hospital, London, Nov., 1776. Craniotomy was resorted to after thirty-six hours of labor. Thirty-six hours more were allowed to pass by, that the fœtus might become softened by decomposition, after which, by three hours' traction, it was brought through the pelvis, and the woman recovered.

No. 5 A is an example of the trifoliate collapse produced by rachitis, being the result of continued pressure upon a very soft pelvis, and probably in a walking subject. It was taken from the pelvis of a woman aged 21, under the care of Dr. J. A. Ransome, in Manchester Infirmary, Eng., in 1867, who died from rupture of uterus, after a labor of 72 hours. Craniotomy was attempted, but upon two occasions at consultation, a majority of the physicians present rejected a proposition to resort to the Cæsarean operation.†

* Dr. John Hull's "Defence of the Cæsarean Operation," Manchester, Eng., 1798–1800.

† Trans. Obstet. Soc., London, 1867.

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Figure B is a copy from a more irregular and less capacious specimen in the Dupuytren Museum of Paris, and is a rare form of rachitic distortion. The Cæsarean operation is imperative in such pelves as these two.

We now come to the rostrate pelvis produced by malacosteon, which I propose to represent progressively by four outline drawings.

No. 6 is an example of commencing rostration, the three points of compression being readily recognized. It is a copy of the superior strait of Mrs. W——, aged 32, who was operated upon by the Cæsarean section, in London, in 1866, by Dr. Robert Greenhalgh, and died in 80 hours. The fœtus presented by the breech, or cephalotripsy might have been employed.*

No. 7 represents a rostrate pelvis of a pyriform shape, in which the rami of the pubis approximate very closely, forming a gourd-like neck, which in the living subject is recognized by the protrusion it causes in the mons Veneris. The pelvis from which it was taken belongs to the Dupuytren Museum at Paris, and may be found in fac-simile in many anatomical collections, one being in the University of Pennsylvania.

No. 8 is a trifoliate pelvis, with left lateral deflection of the spine, the result of advancing malacosteon. It is sometimes called the triangular variety, but is more appropriately compared to a three-leaved growth. It is a copy of the pelvis of Isabel Redman, aged 33, who fell a victim to the Cæsarean operation at Manchester, Eng., in 1794, at the hands of Dr. John Hull,

* Trans. Obstet. Soc., London, Vol. vii.

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ending her life by exhaustion in 21 hours. The ischio-pubic rami were also very closely approximated.*

No. 9 represents, seven-eighths size, the last stage of trifoliate collapse, the effect of malacosteon, prior to entire closure of the pelvis. Dr. Winckel, of Gummersbach, Germany, states that in one case under his care the pelvis became so completely collapsed that it shut off the rectum, and the woman died of rupture of the transverse colon three weeks after he had performed the Cæsarean operation. The drawing is taken from the pelvis of Elizabeth Thompson, 32 years old, operated upon by the Cæsarean section, at the Manchester, England, Lying-in Hospital, in 1779, by Dr. William Wood, and died in 76 hours from gangrene of the uterus. Nine years previously she had an easy labor, and seven years before was delivered by craniotomy, on account of commencing deformity of the pelvis. The Cæsarean operation saved the life of the child.†

No. 10, about five-sixths size, I regard as the most remarkable example of antero-posterior collapse, the effect of rickets, that can be found on record. It is a carefully prepared profile of the superior strait of a rachitic dwarf, made by fitting a piece of paper into the dried pelvis, at my suggestion, by Prof. Abram Sager. The subject of this deformity was Fanny Phillips, aged 35, 42½ inches high, operated upon by the Cæsarean section at the University of Michigan Hospital, Ann Arbor, November, 1869, by Prof. Sager. The mother died in 20 hours, from exhaustion; child

* Op. cit., Dr. John Hull, Manchester, 1799.

† Op. cit., Dr. John Hull, Manchester, 1798–1800.

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lived six weeks, and was believed to have been the subject of congenital rachitis, as both femora had been the subjects of fracture from extreme fragility, one having been broken only a day or two after its delivery.*

No. 11 is a representation of the transversely constructed pelvis of Robert, taken from a cast in the possession of Prof. Hodge. The coccy-pubic diameter of the inferior strait measures 5½ inches, and the bis-ischiatic only 1⅞ inches. The alæ of the sacrum are very short, and the sides of the pelvis remarkably flat.

No. 12 shows the character of the deformity produced by unilateral anchylosis of the sacro-iliac symphysis occurring at an early period, constituting the "oblique ovate pelvis" described by Nagle. The drawing represents a large pelvis, with an ample superior strait, but constructed transversely at the inferior, the bis-ischiatic diameter measuring but 2⅛ inches. Very large, obliquely distended pelves are occasionally met with, which appear to be merely the result of a want of symmetrical development. Such a pelvis, measuring 15 inches in the circumference of its superior strait, may be found in the Wistar Museum. Another form of oblique distortion I have before referred to, as the result of coxalgia.

It is very evident, from the study of these deformities, that it is useless to attempt to lay down any rule for the calculation of space to be required between any two points of the superior space, in order that the cephalotribe may be safely and successfully applied.

* University of Michigan Journal, Sept., 1871.

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A superior strait of almost normal shape and dimensions may lead into an inferior one too small to manipulate through, and vice versâ. The feasibility in the use of instruments will depend upon individual skill, and the peculiarities of each particular pelvis to be operated upon. The rule of space may apply to the symmetrical reniform or cordiform pelvis, but not to a large number of an irregular contour.

(*Continuation from American Journal of Obstetrics, etc., Feb., 1872, Vol. IV., No. 4.*)

In conclusion of the subject presented in the last number, under the above caption, I have only to draw attention to the collection of cases upon which my remarks were based. The "reports" have been as much condensed as was consistent with a fair and proper representation of each individual operation. Some of them must be of very difficult access to the great majority of the medical profession in our country, so that their reproduction will give them a much more general circulation, and greatly facilitate reference to them. Several of the cases are entirely new, and some of these have been reported more fully, than those republished, which

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are mainly in abstract form. It will be seen that although five cases are credited to 1869, I have only presented two for 1870, and one for 1871, the last operation dating since the November number of this journal; this renders it probable that there are others for these two years which have not yet been reported.

At the close of the *Report of Cases*, I present a table of those which were operated upon early, and to which reference was made in the last number. This will present at a glance the whole matter of early interference especially as regards our own country, where timely operations have generally resulted favorably.

I have before mentioned the fact of the extreme rarity of malacosteon in America, and now recur to it in drawing a comparison between our own, and the cases of Great Britain and Ireland. Whilst my table of cases does not present an instance of this disease as a "cause of difficulty," that prepared by Dr. Thomas Radford, of Manchester, gives it as a reason for the operation in about fifty per cent. of the cases. In one hundred and six cases which I have collected from English statistics, but eighteen women were saved. Twenty-four women were operated upon during the first day of labor, resulting in saving six women and seventeen children. Thirteen of the twenty-four women had malacosteon; of these, one lived thirty-two days, two recovered from the operation, and ten died. Five were deformed by rachitis, and all died, although four of their children were saved. Two had pelvic exostosis and both recovered, with a saving of one child.

Thus it will be seen that the Cæsarean operation has

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been very fatal in Great Britain and Ireland, even where a timely resort to the knife has been had, and does not appear there to depend very materially for its results upon the nature of the diseases giving rise to the deformity. It is, therefore, probable, that the character of the climate, and the hygienic conditions surrounding the mass of the patients, are unfavorable to success, for it is certain, that many of their operations have been carefully and skillfully performed. We must under these circumstances, form our estimate for the operation in the United States, from a reference to the results which have been attained under favorable conditions by American operators, and not from English views or statistics.

RECORD OF CASES.

1822, Nassau, New York. A quadroon, fourteen years old, in labor with twins, operated secretly upon herself whilst lying upon a snow-drift, one fœtus escaping by the vagina, the other protruding through the incision, with a considerable portion of her intestines, from whence it was removed by Dr. Bassett, who was called to her assistance. The abdominal incision was made with a razor, and in the form of an L, the angle being slightly obtuse, and the uterus cut obliquely through its fundus. The abdomen was emptied of a considerable quantity of blood, the wound dressed, and the girl recovered without a bad symptom. As she had buried one child in the snow, and no mention is made of the other being alive, it is to be presumed they both

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perished.*—(*N. Y. Medical and Physical Journal*, 1823, *vol.* 2, *p.* 40.)

1827, April 23d, Newton, Ohio. Dr. John L. Richmond, operator. Miss E. C., a large fat woman, under care of two midwives, (in an open log cabin, then on the frontier of civilization,) for thirty hours, and affected with eclampsia. No os uteri could be felt, as the anterior wall of the vagina appeared to cover the cervix, and form an acute angle with the posterior wall in the hollow of the sacrum. After attempting, in vain, for hours to check the convulsions, and ascertain the presentation of the child, Dr. Richmond, without any assistance, and by means of the instruments in his pocket-case performed gastro-hysterotomy, cutting through the placenta in so doing. Not being able to turn the child, which was a very large one, and presented its back to the incision, with its head in the pelvis, he cut it across the loins so as to double it up, and extracted it. No communication with the vagina could be found from within the os uteri. The abdominal wound was left open for two inches at its lower end, until the seventh day, that the lochial discharge might escape, when it

* In 1769, a negress in Jamacia, who had previously borne three children without difficulty, performed the Cæsarean operation upon herself with a butcher knife, making the incision on the left of the linea alba. The wound was dressed first by a midwife, and subsequently again by a surgeon, who removed the placenta through the incision, and washed the intestines free from dirt, which had gotten upon them by their falling out of the abdomen as she lay upon her left side. She was well enough to go to work in six weeks, and bore a child naturally, a year or two afterwards. Violence of temper, and impatience caused her to commit the act, which she would have repeated at her next labor, had she not been watched and prevented.—(*N. Y. Medical and Physical Journal*, 1823, *vol* 2, *p.* 43.)

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was closed, but was again opened on the twelfth, for the discharge of accumulated offensive sanious matter, and kept open six days longer, being syringed out each day through a catheter, with a pint of warm soap-water. Woman never had any pain, commenced work in twenty days, and in the fifth week walked a mile and back on the same day.—*Western Jour. Med. and Phys. Sci., vol.* 3, 1830, *p.* 485.

N. B.—Although but forty-four years ago, this, as far as I have been able to ascertain, after an extensive and laborious search, is the oldest *published* case of the Cæsarean operation by an American operator. Dr. Fleetwood Churchill reports the child as "alive," which is clearly an error, as is also his crediting the first case in this record, to "Mr. Cellen, New York."

1828, Occoguan, Virginia. A Fairfax county Empiric, operator. Case reported by Dr. M. S. Weems. —— Paye, mulatto, age about twenty-five, of middle stature, pelvis normal, mother of three or four children, former labors represented as severe. Pains commenced at full term, continued two or three days, at intervals of about four weeks, during a period of twelve or fifteen months, accompanied during the latter of them by an offensive vaginal discharge. Cæsarean section by an oblique incision was resorted to, and portions of a putrid fœtus removed from the uterus, together with a calcareous incrustation about half a line in thickness, which formed a continuous coating for several inches around the internal os uteri, leaving an opening into the cervix, large enough to admit the index finger. There was little loss of blood, the uterus showed no

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disposition to contract, two or three stitches were taken in it, and the abdominal wound was closed. The woman did well until the middle of the second week, when after eating animal food and drinking cider, violent peritonitis set in, and death resulted in about forty-eight hours. The obstacle to expulsion was believed to be the deposit of calcareous matter, which prevented any dilatation of the cervix.—*Am. Jour. Med Sci., vol.* 18, *p.* 257.

1832, Northumberland, Pennsylvania. Drs. Dougal and Vanvalzah, operators. Report very imperfect, being made through a third party. Patient affected with deformed pelvis. Forceps used unsuccessfully, then the crotchet, and after waiting the woman's consent from the afternoon of one day until the morning of the next, the Cæsarean section was resorted to. Death resulted in five or six days from peritonitis.—*Am. Jour. Med. Sci., vol.* 16, 1835, *p.* 346.

1833, January 11th, Columbiana county, Ohio. Dr. Robert Estep, operator. Mrs. Stull, low stature, full habit, brunette, age twenty-three, pregnant with third child, having been delivered of the first by craniotomy, and second by the forceps. Conjugate diameter of pelvis less than two inches. Rupture of the uterus suspected, body turned and brought down, head locked above superior straight, decapitation, body delivered, attempt at subsequent craniotomy, and failure for want of instruments or assistance, the case being in the interior of the country, with no implements at hand, except forceps and pocket case. Cæsarean operation performed through linea alba, small rupture found, and enlarged

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by incision, head extracted, placenta removed through vagina. Woman walked about her room in twelve days.

1834, June 2d. Same locality and parties as above. Dr. Estep endeavored two months previously to persuade Mrs. Stull to submit to premature delivery, but without avail, as a Dr. T— had promised to deliver her without an operation. Was called in by Dr. T— who had charge of the case, and found a protruding arm and a dead fœtus. Incision, as on former occasions; fœtus large and fully developed; placenta delivered per vaginam; loss of blood six to eight ounces. Patient soon well; sutures in both cases, abdominal only.—*Boston Medical and Surgical Journal, vol.* 15, *pp.* 88, 90.

1835, March 25th, Philadelphia, Pennsylvania. Prof. William Gibson, surgeon, Dr. Joseph G. Nancrede, accoucheur and reporter. Mrs. Reybold, native of Ireland, aged twenty-six, about four and a half feet high, subject of rickets in childhood, lower extremities curved anteriorly, pelvis much deformed, delivered twice previously by craniotomy and reduction of head. Cæsarean section through linea alba before rupture of the membranes, placenta delivered through the wound; child a female, and was still living a few years since. Mother well enough to be down stairs in four weeks, cicatrix perfectly formed by June 1st.—*Am. Jour. Med. Sci., vol.* 16, 1835, *p.* 343.

1835, July 6th, (locality not stated.) Dr. A. Brooke, surgeon; Drs. Foote and T. C. Shreve, accoucheurs. P. A., aged thirty-one, four feet one inch high, two days in labor, under care of a midwife before seen by Dr.

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Foote, who found no dilatation of the os uteri. Dr. Shreve endeavored to perform craniotomy, but failed in consequence of prolapse of the funis, and extreme deformity of the pelvis. Cæsarean operation resorted to after three and a half days of labor,; incision in linea alba. Fœtus of average size, and dead. Conjugate diameter one and three-fourth inches. Patient died of peritonitis four days after operation, at which time no adhesion had taken place in the abdominal wound.—*Am. Jour. Med. Sci., vol.* 18, *p.* 258.

1837, February —, Carrol county, Tennessee. Dr. John Travis, operator. Mrs. P., mother of seven children; of plethoric habit, but suffering with incontinence of urine, and contraction of the vagina consequent upon the rough handling of an ignorant midwife in her previous labor, by which the uterus had been ruptured, the bladder injured, and the vagina and its appendages lacerated, so that her life was saved with very great difficulty after five months treatment. Dr. Travis found her in charge of a mulatto midwife, who had been in attendance forty-eight hours; uterus undilated, and not dilatable by manual interference; vagina so much contracted that the patient was surprised that impregnation had been possible. The Cæsarean operation was performed at her urgent request, after having been made fully aware of its dangers. Incision in linea alba, child of male sex, and lived; mother did well until about fifth day, when she very imprudently sat up, and walked about the house, which brought on pain, vomiting and high fever, and she died on the eighth day.—*Western Med. and Surg. Jour.*, 1842, *p.* 352.

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1837, November 5th, Philadelphia, Pennsylvania. Prof. William Gibson, operator, Dr. George Fox, accoucheur and reporter. Mrs. Reybold, aged twenty-eight, delivered of two children by craniotomy under Prof. C. D. Meigs, and one by Cæsarean section by Prof. Gibson, (see page 122). Operation performed early as in first instance. Uterus found anteverted and united to old cicatrix; fœtus a male, lived and grew to be a fine healthy boy. Mother sat up in bed on the twentieth day, and wound healed, except a small opening, which finally closed by the tenth of the following February.—*Am. Jour. Med. Sci.*, *vol.* 22, 1838, *p.* 13.

N. B.—Dr. Gibson's two operations upon Mrs. Reybold, owed their perfect success, in great measure, to the fact that the patient was not exhausted, and they were performed before labor was much advanced. Dr. Ludwig Winckel, who has operated more than any European surgeon, and with marked success, selects his time for the incision, near the close of the first stage of labor, whilst the membranes are still intact, and evacuates the liquor amnii through the incision, under the opinion that it does not at all irritate the peritonæal lining of the abdomen.

1838, August 12th, New York City. Dr. R. K. Hoffman, surgeon, Dr. Crockroft, accoucheur. Mrs. Day, aged forty-two, primpara, four feet high, spine and body of ordinary length, upper and lower extremities exceedingly short. Conjugate diameter of pelvis one and a quarter inches, patient in labor twenty-four hours prior to Cæsarean section, which was made in linea alba, incision six to seven inches long. Child alive, deformed

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in lower extremities, and soon died. Patient able to sit up in a chair on September 2nd., and to go home to Long Island at the end of four weeks, thirty miles distant, the wound having entirely healed. Was reported well in October of said year.—*N. Y. Jour. of Med. and Surg., vol.* 1, *p.* 214.

1838, Dr. Bennet Dowler of New Orleans, Louisiana, reports that an old drunken negress, who acted as midwife on the plantation of Judge Waggaman, near the city, on being called to a black girl in her first labor, which was a natural one, took a sharp case-knife, and without any reason to justify her conduct, laid open her abdomen and uterus, and removed a living child. The woman speedily recovered, with no other inconvenience except slight incontinence of urine.—*N. O. Med. and Surg. Jour., vol.* 11, *p.* 13.

1840, July 6th, Hamilton, Butler county, Ohio. Dr. Cyrus Falconer, operator, Dr. Prœthur, accoucheur. Miss——, three feet six inches high, but broadly built; pelvis deformed from rickets, conjugate diameter one and three-fourth inches; primipara, with child by an uncle. Left foot of fœtus presenting at the vulva, when Dr. Falconer was called in, who found delivery per vias naturales impossible. Cæsarean operation resorted to, incision oblique from the cartilage of the lowest rib almost to the pelvis, in consequence of the shortness of the abdomen. Child female, living, of ordinary length and weight, and was still alive in May, 1842. Peritonites set in next day, and she died on the eighth. She was taken in labor at midnight, and de-

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livered the next afternoon.—*Western Med. and Surg. Jour.*, *May*, 1843, *p.* 340.

1845, June 10th, East Solon, Courtland county, New York. Prof. Azariah B. Shipman, operator. Mrs. S—K—, primipara, aged forty-one; pains came on two weeks prior to date, lasted severely for forty-eight hours, ceased, and returned on the eighth. Os uteri found high up and to the left side; all efforts to turn the fœtus, apply the forceps, or perforate the head failed, the cervix being forced above the sup. straight by the pressure of a large fibrous tumor, and the head of the fœtus made to impinge upon its brain. Cæsarean operation resorted to in extremity, as an almost hopeless expedient, at the urgent request of the patient. Incision in linea alba; uterus of a dark chocolate color, with walls half an inch thick, which parted before the knife like a partially decomposed tissue. Child of large size, and had been dead several hours; woman died from shock and exhaustion in an hour.—*Am. Jour. Med. Sci.*, 1849, *vol.* 18, *p.* 122.

1845, November 16th, Fredericksburg, Virginia. Dr. Brodie S. Herndon, operator. Mrs. Russel, aged thirty, moderately robust, mother of several children. Labor began October 1st, pains in a few hours gave place to symptoms of peritonitis, which disease lasted a month, during which the liquor amnii escaped, and the vaginal discharge became very offensive. Attempts to dilate the os uteri on November 6th, in order to turn and deliver, failed; ergot produced the expulsion of a putrid placenta. "The patient continued to waste under irritating fever, the discharge from the uterus filling the

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room with stench." Cæsarean operation resorted to on 16th, fœtus removed, uterus sponged out, but it did not contract; abdominal incision stitched up. Wound rapidly healed, and woman recovered—three months after the operation was reported quite well.—*N. O. Med. and Surg. Jour., vol.* 3, *p.* 539.

1846, Thibodoux, Louisiana. Dr. J. A. Scudday, operator. Slave Maria, aged thirty to thirty-two, sixth pregnancy; had aborted at an early period with her four first; went to full term with the fifth; child died, and was subsequently removed with the forceps. Had been in labor twelve hours when Dr. Scudday was called in; discovered a bony tumor arising from just below promontory of sacrum, and projecting across the pelvis. Cæsarean operation in usual manner; child lived a few minutes; woman recovered after a long illness, due to the intervention of inflammation and suppuration.—*N. O. Med. and Surg. Jour., vol.* 6, *p.* 355.

1847, November 14th, Mount Vernon, Indiana. Dr. William H. Byford, operator. Mrs. Barber, aged twenty-six, wife of a farmer, mother of two children, first labor ordinary, second unusually tedious and painful, followed by pain in the left side of the pelvis ever since; right lateral obliquity of uterus. In labor under care of two midwives. Dr. Byford sent for after eighteen hours, but did not arrive until nearly three days had passed. Found waters discharged forty-eight hours, and pelvis nearly filled with a bony tumor growing from the ischium. Delivery through the pelvis being impossible, performed Cæsarean operation through linea semilunaris because of the uterine obliquity. Child of full

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size but dead; little hemorrhage. Woman died on 19th day, probably of peritonitis. She had a node on the right tibia, and the anterior edge of the left was irregular at its upper third.—*Western Lancet, vol.* 7, 1848, *p.* 268.

1849, May 17th, Thibodoux, Louisiana. Dr. J. A. Scudday, operator. Slave Maria, aged thirty-three to thirty-five. Pregnant with her seventh child, sixth removed by Gastro-hysterotomy. Cæsarean operation again performed by Dr. Scudday, resulting favorably to mother and child, the latter being reported as living four months subsequently. Space between apex of tumor and symphysis pubis one and a half inches.—*N. O. Med. and Surg. Jour., vol.* 6, 1850, *p.* 355.

1849, July, St. James, Louisiana. Dr. Thomas Cottman, operator, Dr. Bernard, accoucheur. Negro slave, in labor about twenty-four hours, and forceps ineffectually applied before Dr. Cottman saw her. Cephalotomy was then resorted to and the head partly reduced, but was abandoned as inexpedient, owing to the difficulties presented in the obstruction caused by a sacral exostosis, by which the conjugate diameter was much diminished. Cæsarean section was then performed, and the fœtus with its secundines removed through the wound; uterus contracted rapidly; incision healed by first intention; woman sat up on 12th day, and was about as usual in three weeks. The fœtus minus the parietal bones and brain, weighed twelve pounds.—*N. O. Med. and Surg. Jour., vol.* 7, 1851, *p.* 337.

1849, July, Richmond, Holmes county, Mississippi. Dr. B. Harvey, operator. Slave woman Ester, mother

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of seven children, pelvis normal; had been in labor several hours when Dr. Harvey was called in; could not reach the os uteri. An external examination revealed the existence of an immense ventral hernia. Cæsarean operation then performed, child alive, uterus contracted well, child died in eight or ten days, probably from want of attention. Mother died at the end of three weeks from irritative fever. This woman two years before had rupture of the uterus, and was saved from death by the abdominal section. The case is very imperfectly reported, so that it is impossible to determine what was the exact necessity for the Cæsarean operation. Drs. Foster and Harrington were in attendance as accoucheurs.—*N. O. Med. and Surg. Jour.*, *vol.* 9, 1853, *p.* 772.

1850, January 30th, Opelousas, Louisiana. Dr. Vincent Boagui, operator. *Case not before published.* Negress, age twenty-two, five feet high, field hand, in robust health, primipara. Called in consultation on third day of labor, patient exhausted, cold, bordering on articulo mortis; impossible to use forceps because of pelvic deformity. Cæsarean section made, fœtus male, full grown, dead; silk sutures used in abdominal wound. Woman made a good recovery in three weeks.

N. B.—This woman was saved from death after rupture of the uterus, July 30th, 1851, by abdominal section at the hands of Dr. Boagui. She had been in labor only a few hours when the uterus gave way; was well in little more than a month. Was taken in labor again May 4th, 1853, and died in two hours, from rupture and hemorrhage, the placenta having been attached

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across the line of parting, and being caught in the rent in its contraction, as verified by post mortem examination, "thus presenting a rare and singular form of placenta prævia."—*Communicated by* Dr. Boagul.

1850, May 6th, near Bethlehem, Pennsylvania. Dr. Benjamin Wilhelm, operator. Case reported by Dr. J. Henry Clark, of Newark, N. J. Mrs. Brook, negress, age thirty-one, of good constitution, living in the country; four years previously delivered of a dead fœtus by forceps; afterward miscarried successively at six, five, and seven months, on the last occasion being delivered of dead twins. A year after this, was again pregnant, and at the full period called in Dr. Wilhelm, who found a greatly contracted pelvis, endeavored to use forceps but failed, then to turn, but could only get down one foot. After two days of violent labor, the Cæsarean operation was performed, and a very large dead child removed, believed to have been alive a short time previously. The woman made a good recovery. Was living in 1855, not pregnant since operation.—*New Jersey Med. Reporter, October*, 1855, *p.* 485.

1851, Perry county, Alabama. Drs. John M. Langhorne and E. R. Shoewalter, operators. Mulatto, primipara, about seventeen or eighteen years old. *Case not previously reported.* Figure masculine, with narrow pelvis, transverse and conjugate diameters correspondingly diminutive, the latter estimated at two inches. Had been in labor seventy-two hours when Dr. Langhorne arrived, and went into convulsions upon attempting to make a per vaginam examination. These recurred at intervals until she had had three, from the effects of

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which she never recovered so as to be conscious. Failing to remove the fœtus *per vias naturales*, Dr. Shoewalter was called in consultation, and the Cæsarean operation performed in the linea semilunaris; uterus contracted well after its contents were removed, without hemorrhage. Operation made no apparent impression on the condition of the patient, who remained insensible, and died in twelve or fifteen hours. Dr. Langhorne attributes her death to "the protracted, but convulsive parturient efforts," and the consequent shock to the system resulting therefrom, and regrets that he could not have performed the operation early in her labor, when the results might have been favorable.—*Communicated by* Dr. LANGHORNE.

1851, May 10th, Bayou Sara, Louisiana. Dr. Daniel B. Gorham, operator. Slave woman Lily, about twenty-five years old, first child born three years ago, after a long and tedious labor; has a large umbilical hernia, and is of feeble constitution. Was in labor twenty-four hours under a midwife when Dr. Gorham was called in. Could find no trace of the os uteri even with whole hand in vaginia. Cæsarean operation resorted to after forty-eight hours labor; uterus of a dark livid color, with walls an inch or more in thickness; child living, large and well formed; wound kept open an hour, until bleeding ceased. On the second day opened the cervix for the discharge of the lochia, escape by the wound having been cut off, and kept the canal open by a large bougie. Mother well enough in five days to nurse her infant, with milk enough for its support. Wound healed in two weeks, and woman in all respects doing

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well, with no disposition in cervix to close.—*N. O. Med. and Surg. Jour.*, *vol.* 8, 1852, *p.* 194.

1852, March, Fayetteville, North Carolina. Drs. Mallett and McSwain, operators. Mrs. Taylor, age twenty-one, pelvis full three inches in conjugate and transverse diameters, sup. straight; arm presentation, failed to deliver, Cæsarean operation, dead fœtus, mother recovered. Justifiableness of operation very questionable.

N. B.—Three years from this period, Mrs. Taylor became the subject of rupture of the uterus, probably in the line of the old cicatrix, and three months and six days thereafter had the fœtus removed by Dr. H. A. Bizzell, of Clinton, by the abdominal section, and again recovered.

1852, July 18th, Oktibbeheh county, Mississippi. Dr. William H. Merinar, operator. Slave Phœbe, aged twenty-four, primipara, under care of a midwife from 14th to 17th July, when Dr. Merinar discovered great deformity of pelvis, with conjugate diameter not exceeding two inches. Consultation with Dr. C. P. Montgomery, and decided not to attempt delivery *per vias naturales.* Cæsarean section on morning of 18th, and a large dead male fœtus and secundines removed. Woman had a dangerous and slow recovery; wound closed by September 14th; was quite recovered by close of this month.—*Med. Examiner*, *Philada.*, 1854, *p.* 587.

NOTE.—1852, August 28th, Boston, Massachusetts. Dr. T. R. Owens reports a case of Cæsarean operation, which he performed upon a woman who had died of hæmoptysis, having had consumption for a year previously. She was dead when he reached the house, and the operation was resorted

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1853, December 5th, Alabama. Dr. J. W. Crawford, operator. Slave girl, age seventeen, three and a half feet high, deformed from rickets, primipara, vagina very small, membranes ruptured before arrival. Delay made in hope of being able to deliver *per vias naturales*, but at the end of twenty-four hours was able to define the extent of the deformity, and this was abandoned after an attempt to perform craniotomy. Fifty hours after the commencement of labor, Cæsarean operation performed under chloroform; a pint of yellow serum escaped from the peritoneal cavity; dead child removed; uterus contracted imperfectly; girl died in four hours from exhaustion; fœtus weighed six pounds; conjugate diameter of superior straight, one and a half inches.—*Transactions Med. Association, State of Alabama*, 1854, *p.* 75.

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to at once; the fœtus weighed five pounds when removed, and showed but little signs of life for nearly an hour, when it was restored by means of heat and artificial respiration, and in three hours cried with some vigor. The child was of the male sex, and weighed eight and a half pounds when seven weeks old.—*Boston Med. and Surg. Jour.*, *vol.* 47, 1852, *p.* 295.

NOTE.—*Post Mortem Case*, June 28th, 1853, Worcester, Massachusetts. Dr. Rufus Woodward was called to visit Mrs. P., aged about thirty-five, and weighing some two hundred and thirty pounds. He found her, to all appearances, just dead from a stroke of apoplexy, and in the last stage of pregnancy. Examination showed that the heart of the child was still beating regularly and forcibly. Without any delay, he opened the abdomen and uterus, and delivered a full grown, large and healthy male child. After some delay, and with the usual manipulations and a warm bath, it commenced to breathe, and in an hour was left crying lustily. When the old family doctor arrived, he reflected severely upon Dr. Woodward, for what he had done—said he had operated before the mother was dead, and that the child had better die, for if it lived it would have fits as she had had. He would not allow the child to be dressed, warmed, or fed, and in

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1854, May 22nd, Oktibbeheh county, Mississippi. Dr. William H. Merinar, operator. Slave Phœbe, before reported on page (132.) Cœsarean operation performed a second time, but early in the labor before rupture of the membranes; a mature, living male child removed; hemorrhage slight; incision parallel to old cicatrix. Uterus contracted promptly, and woman made a rapid recovery, wound being entirely healed in five weeks. Last report, made August 18th, "mother and child in fine health."—*Med. Examiner, Philada.*, 1854, *p.* 587.

1855, April 17th, Eastville, Northampton county, Virginia. Dr. Wm. G. Smith, operator. Slave Maria, about twenty-five years old, the subject of almost entire occlusion of the vagina, resulting from vaginitis, following an abortion in March, 1853. Delay until second day of labor, in hope of dilatation being affected naturally, but no improvement. Cœsarean operation performed in usual way, time occupied being just six minutes; but little hemorrhage; child alive, and was still living fifteen months subsequently. Mother lived six days. Dr. Smith says, "I cannot believe that her death was the result of the operation, but the inevitable consequence of the original cause of all her sufferings, the occlusion of the vagina."—*Virginia Med. Journal, vol.* 7, 1856, *p.* 203.

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consequence, it died in eight and a half hours. It is not necessary to say that Dr. Woodward was sustained and commended by the District Medical Society for his conduct in the case.—*Communicated by* Dr. WOODWARD.

NOTE.—Dr. Choppin, of New Orleans, in 1855, attended a woman in the Charity Hospital, at that city, admitted in articulo mortis with yellow fever, and finding her far advanced in pregnancy, examined her by auscultation and palpation, and discovered that the child was living. He

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1855, October 17th, Corning, New York. Dr. Joshua B. Graves, operator. Mrs. Bump, aged twenty-six, trunk of medium size, pelvis deformed, extremities like those of a girl of ten; exhibited about the country as a curiosity. In labor from 13th to 17th; attempt to perform craniotomy on morning of latter day. Cæsarean operation performed in presence of ten doctors, and a living male child, of seven pounds weight removed. Uterus contracted promptly, with but little loss of blood. Patient appeared doing well until 22nd; taken with pain in back and and lower bowels, and died next day. A post mortem examination revealed the fact, that the perforator used by a young physician of Corning, in the attempt at craniotomy, made on the 17th, prior to Dr. Graves' arrival, had passed three times through the rectum into the sacrum, and set up a violent inflammation, which was no doubt mainly the cause of death, as the abdominal and uterine incisions were healing, and there was no evidence of peritonitis. The child was living in 1869. The conjugate diameter of sup. straight was only an inch.—*Med. and Surg. Rep., Philad'a*, 1869, *p.* 375.

1855, October 23d, Oktibbeheh county, Mississippi. Dr. William H. Merinar, operator. Slave Phœbe, aged twenty-seven, twice delivered under Cæsarean section by same operator. Third operation performed after same manner, and a living male child removed. No cold applications to abdomen used as in two former in-

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performed post mortem Gastro-hysterotomy, and delivered a living child, which appeared to have reached maturity.—*Communicated by* Prof. D. Warren Brickell, *N. O., La.*

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stances. Mother appeared to do well for sixty-eight hours, when peritonitis set in, terminating fatally in four days and thirteen hours from the time of making the section.—*Charleston Med. Jour. and Rev.*, 1856, *p.* 172.

1856, May 12th, Richmond, Virginia. Dr. Charles S. Mills, operator. Slave woman, aged twenty-three, three feet nine inches high, head and chest large, pelvis narrow, limbs and body remarkably short, superior straight much contracted, so that the fœtus could not be brought down by the feet so as to be reduced by embryulcia. Cæsarean operation performed after four and a half hours active labor, through linea alba, under chloroform. Uterus contracted quickly, child living, and of full size. Case progressed favorably until the 30th, when phlebitis of left leg arose, which retarded the cure; well in all other respects at the end of four weeks.—*Monthly Stethoscope, Rich. Va.*, 1856, *p.* 424.

1856, Richmond, Virginia. Dr. Edward Drew, operator. A negress, dwarfed in stature, and having a deformed pelvis was also delivered by Cæsarean section in the same year and city. Mother died, child lived and was still living recently. I have not been able through correspondents to obtain a full report of the case.—*Virginia Med. Jour., vol.* 7, *p.* 170.

1856, Wilcox county, Alabama. Drs. A. C. Matheson and Gaillard, operators. Negress, aged nineteen, primipara, deformed pelvis, in labor two or three days before the physicians saw her. Child dead. Cæsarean operation followed by the death of the patient in thirty-six hours, consequent in great measure upon the degree

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of exhaustion at the time of making the section.— *Virginia Med. Jour., vol.* 7, *p.* 170.

1857, New Orleans, Louisiana. Dr. Langenbecker, operator. Case of pelvic deformity, woman died, child lived. Have made considerable effort to procure particulars but without avail.—*N. O. Med. News and Hosp. Gazette*, 1857, *p.* 555.

1857, November, Council Bluffs, Iowa. Dr. William F. McLelland, operator. Mrs. Mullen, aged twenty, in labor at full term, had a child five years before, and was in labor five days and nights, when it was completed by embryotomy. Pelvis much deformed, conjugate diameter reported as one and five-eighths inches, and transverse one and a half inches. Cæsarean operation through linea alba under chloroform; incision eight inches; child cried lustly, was nursed on third day, wound healed before end of second week; woman about the house on the fourth week.—*Boston Med. and Surg. Jour., vol.* 57, *p.* 481.

1857, November 10th, San Francisco, California. Dr. Elias S. Cooper, operator. Mrs. M. P. Hodges, aged thirty-six, primipara, health good, no deformity of pelvis; in labor sixty-one hours, head arrested at the inferior straight in consequence of the occiput presenting to the sacrum, and the pains being feeble. A twin birth being diagnosed, and at the investigation of Dr. Cooper who was confident there were two children, and the Cæsarean operation less dangerous than their instrumental delivery, the section was made, and only one fœtus which weighed eleven and a half pounds found and removed. This child had been in sight at the vulva

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it was said, for twenty hours, and yet the forceps were not applied. The lady recovered so as to be about in forty days; the child was probably dead, as its condition is not referred to. Mrs. Hodges afterwards brought suit against Dr. Cooper for malpractice, and laid her damages at twenty thousand dollars, but the suit was not sustained in court. Dr. Cooper had previously operated with success in Illinois.—*Pacific Med. and Surg. Jour., March*, 1858, *p.* 89.

1858, August 2nd, Lawrenceville, Georgia. Dr. A. J. Shaffer, operator, Dr. Russell, consulting accoucheur. Emeline, married, aged twenty-eight, three feet two inches high, average weight seventy pounds, one of a family of dwarfs. Conjugate diameter of sup. straight one and a quarter inches, transverse two and a half inches; craniotomy performed, and abandoned after three hours dissection. Cæsarean operation under chloroform forty-two hours after commencement of labor. Woman died of peritonitis sixty-three and a half hours after the operation. Fœtus computed to weigh nine pounds.

On the following month, a sister aged eighteen, three feet, five inches high, weighing eighty pounds, and having a pelvis said to be the same dimensions, was delivered safely, by Dr. Shaffer, of an eight and a half pound fœtus by embryulcia.—(*Atlanta Med. and Surg. Jour., Oct.*, 1859, *p.* 65.)

1860, May 19th, Florence, Alabama. Dr. James W. Stewart, operator, Dr. James Kyle, accoucheur. Mrs. Doughlas, age twenty-seven, been delivered of two children without more than ordinary difficulty; mid-

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wife in attendance when Dr. Kyle was called in; found fœtus in transverse position, the uterus emptied of liquor amnii, and strongly contracted. All efforts to turn the child failed, although persevered in for several hours, and there being danger of rupture of the uterus, Dr. Stewart was called in who operated by Cæsarean section under chloroform, removing a dead fœtus and the secundines through the wound. Woman made a good recovery, the wound being healed by the tenth day. Compare with Fowler's case, page 141.

N. B.—In a letter from Dr. Stewart dated Feb. 18th, 1871, he shows clearly that every effort was made to deliver the child through the pelvis, after he was called in, and that the Cæsarean operation was decided upon as offering the woman the best prospect of recovery. She was a delicate woman and apparently inclined to consumption. Since the operation, she has twice been delivered, with the aid of instruments.—*Nashville Med. and Surg. Jour.*, 1860, *p.* 501.

1860, November 3d, Bellevue Hospital, New York City. Prof. B. Fordyce Barker, operator. Mrs. ——, aged thirty-eight, in labor two days; delivered twelve years before without difficulty, and twice subsequently by craniotomy. Membranes ruptured before Dr. Barker saw her; found the sacrum filled with a bony tumor projecting into the pelvis, and shortening the conjugate diameter of its cavity to about two inches. Craniotomy offering considerable danger to the woman, and no hope to the child, the Cæsarean operation was performed under chloroform. Child female, living, nine and three-fourths pounds weight. Wound closed

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by silver sutures; woman died in ninety-seven hours after the operation from peritonitis; she bore the marks of Syphilis on the spines of her tibiæ.

N. B.—In a letter from Prof. Barker, dated May 24th, 1871, he states that the baby has grown to be a fine healthy looking girl, and is named Cæsaria, in honor of the mode by which she was brought forth.—*American Medical Times, N. Y., vol.* 1, *p.* 361; *vol.* 2, *p.* 55.

1861, January 7th, Hamburg, Arkansas. Dr. I. F. Newton, operator. Case reported by Dr. J. M. Owens. Ann, a negro slave, primipara, pelvis much deformed; craniotomy and evisceration believed to be impracticable. Cæsarean operation performed without delay; child a male of full size, asphyxiated, but resuscitated after an hour's perseverence with Marshall Hall's method. Mother and child did well.—*N. O. Med. and Surg. Jour., vol.* 18, *p.* 305.

1862, December 2d, St. Louis, Missouri. Dr. Charles A. Pope, operator, Dr. William S. Barker, accoucheur. *Case not previously reported.* Mrs. Wetzel, aged thirty-two, healthy appearance, transverse position of fœtus (right dorso-pubic) with arm protruding and much swollen. Woman had been in labor nineteen hours under care of a midwife, who, through ignorance, had ruptured the membranes at an early stage, and given ergot freely, thereby discharging the liquor amnii, bringing on powerful expulsive pains, and impaction of the fœtus in the pelvis. Dr. Barker was called in at this stage, and summoned the assistance of Drs. Scott and Newman, who after mature investigation and consultation, decided that delivery through the vagina

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was impracticable. Cæsarean operation performed by Dr. Pope, twenty-six hours after the commencement of labor, during nineteen of which, the pains were very severe. Woman very much exhausted prior to operation, and died twelve hours afterwards. Dr. Barker writes: "She did not die in consequence of the operation, but it failed to save her life probably, because it was too long deferred; she was so completely worn out, it was not strange that she did not rally." The fœtus was above the average size, and had died from uterine pressure.—*Communicated by* Dr. William S. Barker, *St. Louis.*

1863, January 29th, Jefferson County, Indiana. Dr. J. W. Conway, of Madison, operator. Mrs. John Heid, a weak, delicate woman of strumous habit, affected for several months with intermittent fever. In labor fourteen hours when Dr. Conway was summoned; found pelvic cavity almost entirely occupied by a fibrous tumor; conjugate diameter one and a quarter inches, transverse one and a half inches. Cæsarean operation performed; uterus contracted promptly; closed incision with "sutures and silver pins." Wound healed by first intention, woman made a good recovery; fate of child not mentioned, and the inference is that it was dead.—*Cincinnati Lancet and Observer, vol.* 6, 1863, *p.* 401.

1866, August 4th, Burnt Corn, Monroe County, Alabama. Dr. R. Fowler, operator. Mrs. McWilliams, aged thirty-five, anæmic, mother of seven children, and in labor sixty hours when Dr. Fowler first saw her; with the waters long evacuated. Shoulder presenta-

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tion, fœtus impacted in pelvis, pulseless; amputated arm; attempted version by vertex, and then by feet, bringing down one leg, and making strong traction, but in vain; attempted version by the breech, and finally to eviscerate the thorax and abdomen, all of which failed, owing to the peculiar distorted and impacted condition of the fœtus. Cæsarean operation under chloroform in usual way; cold water irrigation dressing; woman made a good recovery, wound being healed in three weeks, and strength enabling her to sit up. Case dismissed on 10th September.

N. B.—Compare this case, with another of impaction, treated by Dr. James W. Stewart, in 1860, at Florence, Alabama, and the following, of Dr. Fisher.—*Southern Jour. of the Med. Sciences, vol.* 1, 1867, *p.* 633.

1866, November 26th, Croton Landing, near Sing Sing, New York. Dr. G. Fisher, operator, Drs. Collins and Knight, accoucheurs. *Case not previously reported.* Mrs. David Connolly, primipara, aged thirty-nine, healthy Irish woman; arm presenting, and had been for some hours when Dr. Fisher was called in by Dr. Collins, all of whose efforts at version, and its return, had failed. Dr. Fisher found brim of pelvis so much contracted, that the arm of the fœtus which was not swollen, entirely filled it. Cæsarean operation decided upon in consultation, and performed, as the only possible expedient. Woman much exhausted prior to section being made, and child believed to be dead; brandy administered to woman, usual incision made, dead male fœtus removed, weighing eight pounds; very little hemorrhage; no uterine sutures used, silver sutures

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to abdomen. Patient rallied satisfactorily after effects of anæsthetic passed off (equal volumes of chloroform and ether). No bad symptoms during three days until her husband who had been much alarmed on account of her condition sought solace in the whiskey bottle, came into her room drunk and picked up a quarrel and fight with his wife's mother; the patient sprang up in bed, and Dr. Fisher believes also on the floor, to try and stop the fight. This caused her death in about twelve hours her symptons being great nervous disturbance, a small, weak, quick pulse, tympanitis, cold extremities and exhaustion. Dr. Fisher writes: "It is my strong conviction that this woman would have lived, but for the accident of excitement and violence, the result of her husband's conduct. I also believe that the lives of both mother and child would most likely have been saved, had the true nature of the case been recognized earlier, and less fruitless effort made at version, and less delay in calling council."—*Communicated by* Dr. Fisher, *of Sing Sing, N. Y.*

1867, August 20th, Pittsfield, Massachusetts. Prof. Wm. Warren Greene, operator, Dr. D. N. Emery, accoucheur. Mrs. B——, aged twenty-eight, primipara, pelvis deformed, sup. conjugate diameter less than two inches. In labor twenty-six hours when Dr. Greene arrived; fœtus active, pains powerful; decided upon Cæsarean operation as preferable to evisceration, and performed it at once under influence of ether, after administering ergot to insure uterine contraction after removal of the fœtus. Child male, eight pounds weight, cried lustily; ergotic contractions interfered some-

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what with the delivery of placenta, but arrested the flow of an active hemorrhage; wound closed with silk sutures. Moderate peritonitis followed; controlled by opium; patient treated with fl. ext. ergot, and Tr. Ferri Chlor. Mother and child reported in excellent condition ten days after the operation.—*N. Y. Med. Jour.*, 1869, *p.* 81.

1867, October 8th, Richmond, Virginia. Dr. Charles S. Mills, operator. *Case not previously reported.*—"Emily Anderson, a dwarf negress, thirty-four years of age, with very large, but well formed head, fully developed chest, arms short and curved, pelvis contracted, lower extremities very short, and stature three feet, nine inches; has generally enjoyed good health since her delivery of a living child by Cæsarean section in May, 1856, until May, 1867, when she entered Howard's Grove Hospital, near Richmond, and was treated for pneumonia. She left that institution in June, and in the latter part of that month, while still very feeble, consulted me at my office about her condition, and remarked that she had not been unwell as usual at her last monthly period. I prescribed for her state of debility, and did not see her again for several weeks when she presented herself at my office improved in strength and general health, but still complaining of the non-appearance of the menstrual flow. I then suspected the existence of pregnancy notwithstanding her declarations to the contrary. This was early in August, and she had not menstruated since her attack of pneumonia in May. I ascertained beyond a doubt that she was at least five months advanced in pregnancy,

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the pulsations of the fœtal heart being very distinct.

"Knowing from previous examinations at the time of the former operation, that she could not give birth to a child at the full period *per vias naturales*, I determined to induce premature labor at seven months, or about the middle of October, with a view to save the child if possible, without endangering the life of the mother.

"On the 2d of October I was sent for, and found that she had been suffering for two days with dysentery in a very violent form, attended by great abdominal tenderness. This continued with temporary alleviations for several days, when uterine contractions commenced, and on the 6th of October active labor set in. The fœtal head during the contractions would project over the symphisis pubis as if about to force its way through the flaccid walls, being unable to enter the superior straight, the space between the promontory of the sacrum and pubes scarcely admitting two fingers. The next day she was visited and examined by several of my medical friends, who without exception declared that even at so early a period of pregnancy, delivery *per vias naturales* was impracticable, from the utter impossibility of getting an instrument up to the head so as to seize it. Under all the circumstances the case appeared hopeless, both for mother and child, but it was thought advisable to resort to delivery by abdominal section, the only chance left, as soon as possible.

"In view however of the constant suffering and fatigue which the patient had undergone, it was deter-

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mined to administer an opiate with the hope of obtaining rest and sleep for the night, and defer the operation to the next morning. Notwithstanding frequent disturbances during the night, she procured some sleep, and on the morning of the 8th, in the presence of Dr. E. H. Smith and his son, Dr. Parker, Dr. Davis and Dr. Creed Thomas, I proceeded to perform the abdominal section, after placing the patient in position, and under the influence of chloroform.

"The cicatrix of the former operation along the median line was distinctly visible, which I avoided by commencing the incision a little to the left, and then continued it parallel with it for about four inches. Cautiously cutting through the abdominal walls, I found them firmly adherent to the omentum and ileum which were intensely injected. Unable to separate the adhesions along the median line without prolonging the operation very much, as well as endangering the integrity of the intestines, I deviated from the original incision by cutting laterally to the left, thereby avoiding them and exposing to view the uterus which likewise was intensely injected. The incision through the uterus exposed the placenta and was followed by a sudden gush of blood. Rapidly enlarging the opening I immediately detached the placenta and removed the child from the womb, which instantly contracted.—Handing the child to one of the medical gentlemen present, the intestines and uterus were placed *in situ*, cleaned from clots of blood, and the wound closed as rapidly as possible by interrupted sutures and adhesive strips.

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"The infant was small, gave a faint cry, and soon expired, despite the efforts of the medical gentlemen in attendance. It was a female, emaciated, and partook very markedly of the deformities of its mother."

The subsequent progress of the case was that of entero-peritonitis, which evidently existed prior to the operation, and terminated fatally on the fifth day after the operation.—*Communicated by the operator.*

1867, November 16th, New Haven, Connecticut. Dr. T. Beers Townsend, operator, Dr. F. L. Dibble, accoucheur. A. B., negress, aged sixteen, of very low intellectual capacity, pelvis deformed from rickets in childhood; in labor forty-eight hours when Dr. Dibble was called in; uterine contractions at that time feeble, membranes had been ruptured twelve hours. Eleven physicians in all called in to see the case, who were nearly unanimous for the Cæsarean operation, the antero-posterior diameter of the superior straight being computed at one and one-half inches. Operation sixty-two and one-half hours after labor began, having been postponed for a night until the uterine contractions should become more decided. Fœtus a male, living, eight pounds, three ounces in weight. *The incision in the uterus was closed with five linen sutures cut close;* time of operation about forty-five minutes. No bad symptoms followed the operation; wound almost entirely healed by the end of the fourth week and patient walking about the house, carrying the child in her arms.

Prof. S. G. Hubbard, of Yale College, who was present at the operation, reports the mother and child in good health, March 17th, 1871, and expresses himself

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in favor of closing the uterine incision by sutures.—*N. Y. Med. Record*, 1868, *p.* 1.

1867, December 21st, New Orleans, Louisiana. Dr. H. C. D'Aquin, operator, Prof. D. Warren Brickell, consulting accoucheur and reporter. Mrs. Despretz, aged twenty-three, native of Louisiana, of French-Creole blood, good health, under care of midwife for five days, and in labor altogether about ten. Dr. D'Aquin called in Dec. 16th; found small short vagina, thrown into a transverse fold or bridle about two inches from the vulva, behind which was the cervix enlarged to the size of a hen's egg and os closed. Os began to dilate on 20th; on 21st had reached a diameter, size of silver half-dollar. Dr. Brickell called in, found patient with anxious expression of countenance, respiration twenty-six, pulse one hundred and forty-three, uterine action ceased for fifteen hours; vagina hot and highly sensitive, diminished in calibre by a species of cicatricial band; tissues of cervix uteri on the verge of sloughing; os admitting two fingers; fœtus putrid and emitting an extremely disagreeable odor. After an attempt to apply the forceps, and perform embryotomy, had failed, the Cæsarean operation was performed under chloroform; uterine wound bled very freely, and uterus not contracting, the right side fell in. It was then decided that to close the uterine wound and arrest hemorrhage, it should be brought together by stitches, and six silver sutures were introduced for this purpose, the ends tied, cut about a quarter of an inch long, and laid smoothly on the uterine surface. Abdominal wound closed in same way, the peritonæum included; time of operation

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forty-three minutes. Patient made a wonderfully good recovery, with scarcely a bad symptom at any time, and left her bed on the twenty-fifth day.

Dr. Brickell writes under date of June 27th, 1871: "The patient is still living, and feels no inconvenience from the wires mentioned in the report."

N. B.—It is impossible in an abstract, to do justice to the very elaborate report of Dr. Brickell, which occupies twelve octavo pages. I have however, presented all the points of the case which are important.—*N. O. Med. and Surg. Jour., vol.* 21, *July*, 1868, *p.* 454.

1868, December, Mobile, Alabama. Dr. J. T. Gilmore, operator, Dr. Gaines, accoucheur. *Case not previously reported.* Negress, aged nineteen, deformed from rickets; had been in labor two days when first seen by Dr. Gilmore, who recognized a deformed pelvis, conjugate diameter "certainly not reaching one and a half inches." Neck of uterus elongated and protruding from the vulva, and a fœtal foot presenting through the os. Delivery *per vias naturales* being found impossible, Dr. Gilmore performed the Cæsarean operation and removed a dead fœtus. Woman died of peritonitis in sixty hours. This is believed to have been the only case ever operated upon in Mobile.—*Communicated by the operator.*

1869, March 2d, Aberdeen, Mississippi. Dr. E. Paul Sale, operator, Dr. John W. Moore, accoucheur. Mary Ann, negress, aged twenty-two, unmarried, a cripple from atrophy of muscles of left leg; weight 110 to 115 pounds; contractile pains had existed for four or five weeks; diagnosed an extra uterine pregnancy. Ab-

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dominal section made, cyst opened, and a living child removed. Uterus found also developed, and containing a second fœtus; hysterotomy performed and child delivered alive. Woman died on the 7th of supposed septicæmia; no autopsy. April 15th, children doing well.—*N. O. Jour. of Med., Oct.*, 1870, *p.* 731.

1869, September 17th, Philadelphia, Pennsylvania. Dr. Walter F. Atlee, operator, Dr. William H. Hooper, accoucheur. Mrs. O'H——, aged thirty-one, of healthy appearance, twice delivered by embryotomy, conjugate diameter of sup. straight computed at two inches. Cæsarean operation performed prior to rupture of the membranes; placenta under line of incision; hemorrhage not more than in ordinary labor; fœtus removed alive; abdominal wound closed with silver gilt wire sutures. Woman did well for four days; incision healed by first intention; abdomen became tympanitic, no passage through the bowels, lochia normal, mammary secretion not arrested. Patient died on the 23d, probably from the enormous distension of the abdominal cavity. The woman had had a large pelvic abscess after her second confinement, which bursted into the rectum. No post mortem examination could be obtained, so that the cause of the obstruction in the intestines remains in obscurity, and can only be conjectured.*—*American Jour. Med. Sci., April*, 1870, *p.* 393.

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* *Gastro-hysterotomy and hysterectomy.*—Dr. Horatio D. Storer, operator. 1869, July 21st, Boston, Massachusetts. Mrs. H——, aged thirty-seven, native of Pennsylvania, primipara, pregnancy complicated with a large fibro-cystic tumor of the uterus. Woman in labor nearly three days without any advance; craniotomy, and cranio-clasm regarded as impossible of

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1869, October 9th, Edgefield, South Carolina. Dr. J. Walter Hill, operator. *Case not previously published.* Margaret Gray, aged thirty-two, negress, about five feet high, healthy appearance, in labor with second child, cause of difficulty contraction of the vagina produced by first labor, twelve years ago, which lasted six days, producing sloughing of the vagina and perinæum, with vesico-vaginal fistula. Pelvis judged to be well formed. After a labor of fifty-six hours, Cæsarean operation resorted to; child a male, and removed alive; abdominal wound not disturbed until sixth day, when union by the first intention had taken place with the exception of about an inch at its lower end; complete adhesion by eleventh day. Compresses kept constantly applied to abdomen, wet with carbolic-acid and glycerine, during the process of healing. Mother, and "Julius Cæsar Gray" reported alive, and well, in February, 1871. —*Communicated by* Dr. J. Walter Hill.

1869, December 20th, Baltimore, Maryland. Dr. James H. Butler, operator, Drs. Connor and Bohannan, accoucheurs. Jane Long, negress, aged twenty-six, deformed from childhood, left femur flexed upon the pelvis, and anchylosed, probably from coxalgia; woman under care of midwife when the accoucheurs were called in; craniotomy performed but without advancing the fœtus. Conjugate diameter sup. straight computed at two inches, and transverse at one and a half;

execution. Cæsarean operation resorted to; walls of uterus two inches thick, fœtus removed in a putrescent state; uncontrollable hemorrhage from uterine incision occurred; uterus extirpated to prevent bleeding to death. Died in sixty-eight hours.—*Jour. Gynæcological Society, Boston, Oct.*, 1869, *p.* 223.

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pulse feeble, constant hemorrhage from vagina. Gastro-hysterotomy by Dr. Butler, woman being under chloroform; child partly decomposed, uterus contracted slowly. Patient died on 23d from peritonitis; her condition almost hopeless from long delay, at the time the operation was resorted to.—*Boston Jour. Gynæcological Soc., July*, 1870, *p.* 44.

1869, November 11th, Ann Arbor, Michigan. Prof. Abram Sager, operator. Miss Fanny Philips, born in America, of English parentage, aged thirty-five, forty-two and one-half inches high, legs much deformed, and spine moderately so. Pelvis markedly distorted, the superior straight being an irregular fissure, an inch wide in its broadest part, extending across the body. She had never walked except upon crutches, and was informed by her mother that her deformity was congenital; still her health was good, and she was able to attend to the usual hard service incident to her humble condition. Her entire pelvis was in size that of a girl of eight or nine years of age, and exceedingly light and thin, the distance between the anterior superior spinous processes measuring about seven and one-half inches. The conjugate diameter of the superior straight was but five-eighths of an inch.

Gastro-hysterotomy being imperative, was performed eight or nine hours after the commencement of labor, when the os uteri had scarcely commenced to dilate, and the membranes were intact. Hemorrhage quite considerable; a small fibroid tumor in the line of the incision, rendered the closure of the uterus imperfect, and four silver sutures were made use of to effect it.

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Fœtus alive, and continued to live for six weeks; mother sank from secondary shock and died in twenty hours. A post mortem examination revealed general conjestion of the peritonæum without effusion, and an irregular contraction and closure of the uterine wound, at the point occupied by the fibroid tumor, by which a few ounces of the lochia had escaped into the peritoneal cavity, which was apparently the cause of the peritoneal lesion, and shock.—*Communicated by* Prof. Abram Sager, *University of Michigan.*

N. B.—From a drawing of the brim of this woman's pelvis kindly sent me by Prof. Sager, I am inclined to believe that infantile rickets at a very early period, was the cause of the deformity, and that the latter was not congenital, as supposed by the mother. It is possible that the disease may have existed at birth, but the alteration of the pelvis must have been produced afterward.

1870, January 1st, Kingsbridge, New York. Dr. P. De Marmon, operator. Mary Flinn, Irish, aged about forty, third labor; five days with first child, and three with second, the former being in a putrefactive state, and latter removed by craniotomy. Urged premature delivery upon her for the third, but declined. Gastro-hysterotomy when forty-four hours in labor, under chloroform; profuse hemorrhage from uterine wound, one suture taken in it and removed thirty-six hours afterwards. Child female, living; woman died in forty-two hours; conjugate diameter two and one-eighth, transverse two and one-quarter. Died of metro-peritonitis.—*N. Y. Med. Gazette, vol.* 4, *p.* 136.

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1870, May 23d, Portland, Maine. Dr. T. A. Foster, operator. Mrs. H——, American lady, aged forty, medium size, good form, always enjoyed good health, primipara. Had irregular pains for two weeks. May 16th, had a discharge of dark colored fluid, and some blood-clots. May 21–22, midnight, pains became more severe; made no progress in labor until three P. M. on the 23d, when violent convulsions took place. Chloroform was administered, the os dilated by the hand, forceps applied, but fruitlessly, as the uterine walls were firmly constricted around the neck of the fœtus; turning could not be performed, or the least change made in the position of the child. Strength rapidly failing, Cæsarean operation was performed at 6 P. M. Tumor about the size of a goose-egg found upon the right side of the middle third of the body of the uterus, and constriction referred to, also seen, requiring division to free the head. Uterine wound gaped, ten silk sutures used to close it, with ends brought out at lower part of abdominal incision, which was closed by silver sutures. Child alive, but died in a few hours, probably from uræmic poisoning.

Urine of mother highly albuminous; died in sixty hours; autopsy three hours afterward; no attempt at union; a few ounces of thin dark-colored fluid in the peritoneal cavity; left kidney healthy, but right, so degenerated, that scarcely a pyramid could be seen.—*Transactions of Maine Medical Association*, 1868–69, *p.* 273.

1871, November 23d, Albany, New York. Dr. J. V. P. Quackenbush, operator. *Case not previouly re-*

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ported. "Mrs. Madison, a dwarf, aged thirty years, fell in labor with her first child November 20th, 1871. A physician was called, who made an examination and then left. She then fell into the hands of a midwife who remained with her till the evening of November 22d, when I was sent for. I found her pains severe, and on examination discovered the compressed head forcing its entrance into a deformed pelvis. I used my perforator, and after having performed craniotomy discovered that the woman could not be delivered save by the Cæsarean section. I explained to her the nature of the operation, to which she assented, and I operated on the morning of the 23d. She bore the operation well, and did well during the 23d and 24th, but on the evening of the 25th, she showed marked signs of peritonitis, and died on the 26th, having survived the operation seventy-two hours.

"I attribute the failure of the operation 1st, To the long period in which she had been in labor; 2d, To the non-contraction of the uterine fibres; 3d, To the long time during which the contents of the abdomen were exposed to the air, waiting for the contraction; and 4th, To the hemorrhage from an artery in the uterine walls, to avert which, I introduced two silver sutures, with which I drew the gaping edges of the wound together."

N. B.—This is the seventh case in this collection, in which sutures were employed to close the uterine wound, six of them having occurred between November 15th, 1867, and November 25th. Two of them recovered, although to all appearance very unfavorable

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TABLE OF THE CÆSAREAN OPERATIONS IN THE UNITED STATES,

Which were performed during or at the close of the first day of labor, showing the value of timely surgical interference. In all of the cases but one, the child was removed alive.

No.	Year.	Locality.	Age.	Color.	Cause of Difficulty.	Name of Operator.	Result to Woman.	Result to Child.	Cause of Death.	Hours in Labor before Operation.
1	1835	Philadelphia, Pa....	26	White	Deformed Pelvis..	Dr. Wm. Gibson..	Recovered	Alive ...	.....	A few hours only.
2	1837	" "	28	"	" " ..	" " " ..	"	" ...	.....	" "
3	1838	New York City.....	42	"	" " ..	" R. K. Hoffman	"	Dead....	Child deformed, and died soon after delivery.	Twenty-four hours.
4	1838	Near N. Orleans, La.	..	Black	Not any.....	Drunken Midwife	"	Alive ...	.....	A few hours.
5	1840	Hamilton, Ohio....	..	White	Deformed Pelvis..	Dr. Cyrus Falconer	Died	" ...	Peritonitis	Less than 24 hours.
6	1846	Thibodeaux, La....	30	Black	Exostosis	" J. A. Scudday.	Recovered	Dead....	Child feeble, and died soon after delivery.	Twelve hours.
7	1849	" "	33	"	"	" "	"	Alive ...	.....	A few hours.
8	1849	Richmond, Miss....	..	"	Ventral Hernia...	" B. Harvey.....	Died in 3 weeks.	" ...	Irritative Fever.....	" "
9	1852	Wilcox County, Ala	31	"	Impacted Head...	" Zacch. Nettles.	Recovered	" ...	.....	Fifteen hours.
10	1854	Oktibbeha, Miss....	26	"	Deformed Pelvis.	" W. H. Merinar	"	" ...	.....	Before rupture of membranes.
11	1855	" "	27	"	" " ..	" "	Died	" ...	Peritonitis	A few hours.
12	1856	Richmond, Va.....	23	"	" " ..	" Charles S. Mills	Recovered	" ...	.....	4½ hours actively.
13	1857	Council Bluffs, Iowa	29	White	" " ..	" W. F. McClelland	"	" ...	.....	Early.
14	1861	Hamburg, Ark.....	..	Black	" " ..	" I. J. Newton...	"	" ...	.....	A few hours.
15	1863	Jefferson Co., Ind..	..	White	Fibrous Tumor....	" J. W. Conway.	"	Dead....	Cause not given.....	Fourteen hours.
16	1869	Philadelphia, Pa...	31	"	Deformed Pelvis..	" Walter F. Atlee	Died	Alive ...	Obstruction of bowels	A few hours.
17	1869	Ann Arbor, Mich..	35	"	" " ..	" Abram Sager..	"	" ...	Secondary Shock.....	Eight or nine hours.

White Women, 8; Recovered, 5; Children Saved, 6.
Black " 9; " 7; " " 8.

73 10-13 per cent. of women, and 86 2-13 of children saved by operating early.

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cases. During this same period an equal number were sutured in Great Britain and Ireland, with exactly the same proportion of deaths.

The comparative results of the Cæsarean operation in the two countries are as follows:

Great Britain and Ireland..	Cases, 106.	Fatal, 88.	Children saved, 60.
United States.....	" 60.	" 28.	" 27.

SOME ANCIENT METHODS OF DELIVERY.

By WM. GOODELL, M. D., Philadelphia, Pa.
Clinical Lecturer on Diseases of Women and Children in the University of Pennsylvania.

(Read before the Philadelphia Obstetrical Society, January 4, 1873.)

While pursuing an historical inquiry, through the works of the ancient writers on obstetrics, I was struck with some features of their practice, which are not known to the profession at large. The most striking of these I purpose to lay before you this evening; not, however, on account of their practical value, but in order to bridge over a gap in the history of our art.

From time immemorial, women were usually delivered on a special stool, or on some like make-shift. This position they took at the beginning of the expulsive pains, and kept until the end of the labor. Allusions to this method of delivery are found in records of high antiquity. In Exodus i., 15, 16, we read that "the King of Egypt spake to the Hebrew midwives, of which the name of the one was Shiphrah, and the name of the other Puah; and he said, 'when ye do the office of a midwife to the Hebrew women, and see them upon

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the stools; if it be a son, then ye shall kill him: but if it be a daughter, then she shall live.'" According to this verse, the Hebrew and Egyptian midwives placed their patients in a sitting posture, as early as sixteen hundred years before the christian era. In the Fragments to Calmet (Nos. 312, 313), however, it is contended that the Hebrew word *ovnayim*, being in the dual evidently means two stones, *i. e.*, a stone trough with its lid; and that therefore, the word rendered "stools" in our authorized version, should be translated the "stone-troughs" in which the newly born infants were washed. With all deference to this opinion of the learned commentator, I would suggest that possibly in that stone age, the women were delivered while sitting, either upon the corner of this trough, or else over the round opening of its stone lid, placed crosswise. Nor will you deem this a mere conceit after examining figure 1, a fac-simile of a wood-cut taken from Joannis Michaelis of Savonarola (*Practica Major*, *Venetiis*, 1547, *p.* 280). In that curious work he highly lauds this rude stool, and speaks of it as being of great antiquity, and much esteemed by the ancient Greeks. In the original, a companion figure shows it in use, as follows: an assistant sits behind, on the rounded knob, supporting the patient, who is seated in front, upon the forked

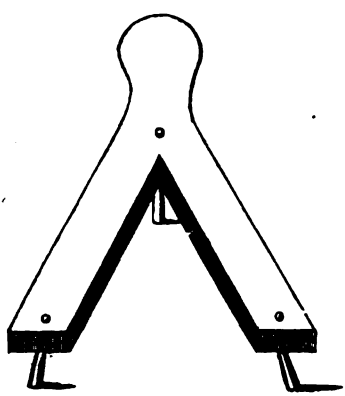

FIGURE I.

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portion of the stool. The broad corner of a stone trough would certainly afford quite as good a seat as the forked sides of this obstetric stool.

In natural labors the obstetric stool was recommended by all the Greek writers; such as Aspasia, Cleopatra, Soranus, Aetius, Paulus Ægineta, Oribazius and Rufus Ephesus. It was also advised, in the form of a bench, by the Arabian physicians, Avicenna (Lib. 3; Fen. 21, Tract 2; Cap. 23, 24,) and Albucasis, and also by their immediate disciples. As Hippocrates does not treat of natural labor, he makes no allusion to the use of the stool before the birth of the child; but, in retention of the secundines, he directs the woman to be placed either on a "chamber-pot," λασανον, or on "a reclining perforated chair," ἐπ' ἀνακλήτου δίφρου τετρυπημενου (*De Superfœtatione*, *Ed. Foesii*, *Francofurti*, 1621, *p.* 261); which shows that he deemed it too familiar an object to need a description. I am bound, however, to add that both Vander Linden and Littre retain simply the "chamber-pot," evidently regarding the "perforated chair" as a gloss of later transcribers. That the Romans adopted the same plan is evident from the works of Galen (*De Natural. Facultat.*, *Lib.* iii., *Cap.* 3), and of Celsus (*De Re Medica*, *Lib.* vii., *Cap.* 29), and from the plays of Plautus, 160 B. C. (*Truculent.*, *Act* ii., *Scene* 5). There is also a natal coin, struck in commemoration of the birth of the Emperor Antoninus, which represents the Empress Faustina reclining on an obstetric stool, and exultantly holding up her newly born infant, (*Schlegel's Sylloge ad Artem Obstet. Lipsiæ*, 1795, *vol.* i., *p.* 65).

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Moschion, of the second century, the first writer who treats of natural labor, describes the obstetric chair of his day "as in form like a barber's chair, but with a crescent-shaped opening in the seat, through which the child may fall," *ὅπως ἐκεῖσε το ἔμβρυον πεσεῖν δυνηθῇ* (*Περι Γυναικειων Παθων, Κεφ.* xlvii). In case this chair could not be had, he recommended the woman to sit upon the knees of an assistant; a practice still in vogue in some parts of Ireland, where the husband usually performs this duty. Moschion was an enlightened and a thoroughly practical obstetrician; he wrote a tract, now lost, on pessaries, and is the first physician who taught that version should be resorted to in many difficult cases of labor. I have examined all the works on antiquities that our public libraries contain, but can find no representation of this "barber's chair." Of much more recent date is Figure 2, but, with the exception of the mortises for two upright handles, it seems very accurately to answer Moschion's description. It is copied from an unpaged work in black letter of Eucharius Rhodion, (*De Partu Hominis*, 1544, *Cap.* 3). A like wood-cut is found in the English translation of this book by Raynalde, (*The Birthe of Mankinde*, 1598, *p.* 107), and also, although somewhat embellished, in Fournier's work, (*L'Accoucheur Methodique, Paris*, 1677, *p.* 70).

FIGURE II.

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So highly esteemed was this same form of chair, that the celebrated Jacob Rueff, of Zurich, gives a representation of it, modestly attired, however, in a valance, (*De Conceptu et Generatione Hominis*, 1554, *Lib.* iii., *Cap.* 2). Rueff, by the way, was the author, for whom, as against Harvey, MM. Gavengeot and La Faye, out of hatred to "perfidious Albion," claimed the discovery of the circulation of the blood. Their countryman, Portal, nobly says that "they were actuated more by jealousy and rivalry, than by the love of truth," (*Histoire de l'Anatomie, tome* i., *p.* 515).

In 1582, Ambrose Pare (*De Hominis Generatione, Cap.* 16,) warmly advocated the use of the "*sella perforata*," on the score that the sacral bones and pelvic ligaments would more readily yield, and the perinæum more easily dilate. The great weight of his authority so influenced the profession that, down to the middle of the last century, the obstetric chair was deemed an indispensable equipment to the midwife and accoucheur. It is true that, as early as 1668, Mauriceau, with the independence of genius, gave the cold shoulder to the "midwives' stools," as he scornfully called them, and recommended the delivery of the woman on her own bed, (*Maladies des femmes Grosses, Lib.* ii., *Cap.* 7). But, a few years later, we find Dionis, then in high repute, roundly chiding him for this innovation, (*Traite General des Accouch.*, 1724, *p.* 209).

Among the poor the obstetric chair was carried from house to house; every wealthy family owned one as an indispensable article of furniture; whilst, in the palaces of kings, it was kept as a state appendage. Thus, late

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in the last century the learned Osiander laid before the obstetrical society of Goettingen the pattern of a portable chair, for the use of country doctors and midwives, so constructed that it could be taken apart, (*Essais sur la situation de la femme dans le travail*, etc., *par A. Filhastre, Montpellier*, 1816, *p.* 31). Louise Bourgeois, midwife in ordinary to the court of Henry IV., of France, naively remarks, in a very curious chapter on the labors of Marie de Medicis that, at the birth of the Dauphin, "la chaise pour accoucher fut aussi apportee, qui estoit converte de velours cramoisy rouge," (*Observations Diverses*, 1617, *p.* 153). Again, in 1714, that dilettante, Corneille Le Bryn, states in his entertaining "Voyage au Levant," that he saw in the cabinet of the Grand Duke of Florence the state obstetric chair, which was elegantly carved and studded with jewels.

The use of this chair was probably first suggested by "the resemblance of the expulsive efforts of labor to those made on a close stool to relieve a constipated condition of the bowels," (*Baudelocque, l'Art des Accouch.*, § 600). Thus Ludovicus Bonaciolus puts a woman on the obstetric chair and enjoins her "to strain with those muscles which empty the bowels," (*Enneas Muliebris, Cap.* 8). Louis de Mercado, court physician to Philip II., of Spain, whom Haller styles a "*verbosissimum scriptorem*," in that respect quite like his master; enumerates the following advantages arising from the use of the "*sella obstetrica*": (a) The os uteri is directed towards the outlet. (b) The child's weight aids the expulsive pains. (c) The coccyx is free to move backward, and the perinæum to dilate, (*De*

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Mulier, *Affectionibus*, *Lib.* iv., *Cap.* 3). Of course this position of the woman precluded any support to the perinæum; for, as D. Sennertus teaches, "the midwife's hands must be covered with a cloth into which the child is received," (*Practicæ Medicinæ*, *Witteberg*, 1632, *Lib.* iv., *p.* 412).

As, in our time, eminent physicians are seeking to improve the obstetric forceps, so, in those days, learned men did not disdain to perfect the *sella lochiæa*, *obstetricia seu obstetrica*, as it was indifferently termed. According to Schlegel (*Op. cit.*, *p.* 67), Welschius, of Leipsic, invented an adjustable back, by which the trunk of the woman's body could be raised or depressed, in order to accommodate the axis of the child's head to that of the curved pelvic canal. Heister, Van Solengen and Van Deventer further improved it by the addition of sides and arms, as in Figure 3, which is reproduced from Deventer's work, (*Operat. Chirurg. novum lumen obstetricantibus*, *Leyden*, 1701, *chap.* xxvi). In 1687, Voelters, of Wirtemberg, gained great credit by devising—what had hitherto been overlooked—a brace for the feet. Justus Godefroy Gunz, physician and counsellor to the King of Poland, made some slight improvement to this chair, and contended that it should be used in every natural labor, (*De Commo-*

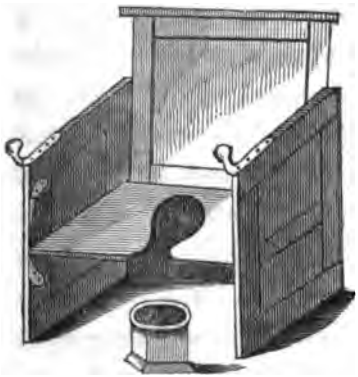

FIGURE III.

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do Parturientium Situ, Lipsiæ, 1741). Daniel Triller also wrote a book on the same subject, (*Clino-technia, Francofurti*, 1774). Even the great Meckel gave his name to a chair, as well as to a ganglion. Finally in 1772, after seeing "an illustrious lady" fatally injured by falling over backwards from one of the old-fashioned chairs, that excellent accoucheur Stein, professor of obstetrics at Cassel, utilized all these improvements in his celebrated *geburtsstuhle*, (*Geburtshulfe, Marberg*, 1805, *vol.* ii., *tabula* 9). Numberless pamphlets and references, and several editions and translations of his work bear witness that his contemporaries deemed this the *ne plus ultra* of obstetric chairs. In fact, the whole continent of Europe hastened to adopt it and to do homage to the genius which conceived it. Who could resist the refinement of its construction; the notches numbered according to the stages of labor; the ingenious foot-brace adjustable, by a nest of clogs, to any length of leg? Briot of Paris, Plenck of Buda and Pitt of Lyons hastened to commend it. Its adoption in France would have been universal, had not Levret and the elder Baudelocque waged a counter crusade. By a reference to Figure 4, the reader will see that the front legs were prolonged into handles for the woman to grasp; and that, by a swinging prop behind, and several notches in front, the back could be raised or depressed to suit the different stages of labor. Thus: at the beginning of active pains the back was made nearly upright; in proportion as the head descended, the angle was increased notch by notch, and then, for further security, the prop was firmly planted into the

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floor, so that by no possibility could any other "illustrious lady" meet with an untimely end. When the perinæum began to bulge, the ratchets were shifted to the last notch, in order to place the woman in nearly a horizontal position. In addition there was a contrivance, called an "ante-chair," (omitted in the figure) which could be hooked on to the chair proper, converting it into a couch, whenever, through exhaustion or hemorrhage, the woman could not be safely removed to her bed. George Wilhelm Stein was born, bred and buried in Germany; it does not appear that he travelled much further than from Cassel to Marberg, and then probably to correct his proof-sheets; it is even doubtful whether he ever subscribed to the *Amerikanischer Demokrat*, and yet he constructed a labor-saving machine which would do credit to any of our agricultural fairs.

FIGURE IV.

After the use of the forceps became general, and in

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proportion as the method of supporting the perinæum grew into fashion, the obstetric chair lost favor in France as elsewhere. When a general favorite falls into disgrace its character is sure to suffer. Early in the last century, John Huwe, of Holland, protested against its use, (*Onder Weys der Vrouwen*, etc., Haarlem, 1735; from *Essais Historiques*, etc). Gehler, although its warm advocate, states that "many authors" contend "that the obstetric stool causes prolapse of the womb and ruptures of the perinæum," (*De Partus Naturalis Adminiculis, Lipsiæ*, 1772). That "man-midwife," Tolver, asserts, that "at Bruxels, where Devanter's chair is indiscriminately used, lacerations of the fourchette and perinæum are very frequent," (*Present State of Midwifery in Paris; London*, 1770, *p.* 9). After the beginning of this century little is heard of it, until 1816, when Filhastre (*Op. cit.*) vainly strove to introduce the one represented by Figure 5, which was

FIGURE V.

devised by Matteo Moro, and highly approved of by

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Assalini, Gianni and other eminent Italian obstetricians, (*Uso, discrezione, ed utilita di una nuova seggiola obstetricia, Milano*, 1812). For the convenience of country practioners it could be taken apart, and carried about on horse-back; it also had two leather straps in front into which the woman's feet were placed. Despite Filhastre's enthusiasm, and the weight of such Italian authorities, the custom had become too obsolete to be revived; and the obstetric chair, coeval with the pyramids of Cheops, passed, after forty centuries of use, from the lying-in chamber to the cabinets of the curious.

Of quite as great antiquity was another method of delivery practiced by the ancients. In lingering labors, and especially in those of fat women, the patient was removed from the stool and instructed to assume the kneeling, or the knee-elbow posture. The reasons assigned are as follows: (a) The perinæum was thus saved from the weight of the child's body. (b) The womb, by inclining forward, would present its mouth directly in the axis of the pelvic canal. (c) This position would cause the abdominal walls and omentum to fall away from the child, and thus relieve it from the super-incumbent weight of fat. It must be remembered that the ancients, arguing from the tedious birth of dead children, entertained the idea, that labor was caused mainly by the struggles of the fœtus to gain its liberty. Hence the expression "still-born" in the folklore of our ancestors, who thought that a "lively child" promised an easy labor, and a "still child" the reverse.

The earliest reference to this posture that I can find, is in Homer's "Hymn to Apollo." After bewailing

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Latona's tedious labor of "nine days and nine nights," the bard represents her, in her last throes, as "clasping a palm tree and kneeling upon the soft meadow,"—

Ἀμφὶ δὲ φοίνικι βάλε πήχεε, γοῦνα δ' ἔρεισεν Λειμῶνι μαλακῷ.

It is possible that Homer, regarding more the flow of his metre than the facts of the case, invented the "palm tree;" for, according to Lempriere, other classic writers describe it as an "olive tree." We will not however dispute about the tree, but give Chapman's quaint rendering of the passage:

> "When ent'ring Delos, she, that is so dear
> To dames in labor, made Latona straight
> Prone to delivery, and to wield the weight
> Of her dear burden with a world of ease.
> When, with her fair hand, she a palm did seize,
> And, staying her by it, stuck her tender knees
> Amidst the soft mead, that did smile beneath
> Her sacred labor; and the child did breathe
> The air in th' instant. All the Goddesses
> Brake in kind tears and shrieks for her quick ease."

At the risk of dispersing the halo of sentiment which the versification of both Chapman and Coleridge* has cast around this parturient posture of the Goddess, with regret, I add that, at the present day, the tattooed cannibals of New Zealand, during labor, "kneel down with their thighs apart, and having their hands resting on a tree or stick," (*Brit. and For. Medico-Chirurg. Review, vol.* 15, 1855, *p.* 525).

After Homer, this kneeling or knee-elbow posture is alluded to by many writers. Festus Pompeius states that the "Gods of Travail (*nixi dii*), who presided

* "Introduction to the Study of the Greek Classic Poets."

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over labor, were three statues in the Capitol, on their knees before the chair of Minerva," (*Essais Historiques Sur l'art des Accouch., par Sue, vol.* 1, *p.* 169). "*Pinguissimam autem*," writes Moschion, "*in lecto in genua atque ad dentes collocamus.*" This same treatment of fat women is found in the works of Hippocrates, Galen, Paul of Ægina, (*Op. cit., Lib.* iii., *Cap.* 62, 76), Aetius, (*De conceptus et partus ratione, Cap.* 22), and of most of the "modern ancients." Nor was it confined to remote times; for in some portions of Russia, Greece and Turkey the women are yet delivered on their knees. In 1779, Hopkins objected to the lateral position, and recommended that on the hands and knees as the best, (*The Accoucheur's Vade Mecum*). Denman was of opinion that this posture is instinctively sought by an unassisted woman, (*Prác. Midwif., London*, 1972, *part* i., *p.* 58). Whilst in 1791, that shrewd observer Charles White, quoted Denman approvingly, and argued that the knee-elbow position prevented, in a natural labor, too great a pressure on the perinæum, (*Management of Pregnant and Lying-in Women, London*, 1791, *p.* 104.

Many other features in the obstetric practice of the ancients are tempting to pursue: such as, in difficult labors, the succussion of a woman by four attendants, advised by Hippocrates, (*On Excision of the Fœtus, sec.* iv.); tossing up a woman in a blanket as recommended by Albucasis in malpositions,—a plan which my friend, Dr. Ely McClellan, U. S. A., tells me is still practiced by the Indian tribes in our western territories. Did time permit, I should like also to trace up

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to their source among the ancients, as most of them can be, the prevalent superstitions of the lying-in chamber, such as the virtues of the caul, and the non-viability of an eight months' child, the latter being due to the belief, that Saturn, who devoured his sons, was the tutelar god of August, the eighth month. In conclusion, let me offer as an excuse for this very unpractical paper, an opinion advanced by Socrates in his discourse against the sophists of his day: "The arts and sciences are adorned not only by discoveries, but also by the collection of whatever concerns them, whether curious, historical or new."

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

REPORTED BY GEORGE PEPPER, M. D., SECRETARY.

STATED MEETING, AUGUST 3, 1871. DR. R. P. HARRIS IN THE CHAIR.

DR. PARRY read a paper upon "The Sudden Enlargement of Ovarian Tumors." (See AMERICAN JOURNAL OF OBSTETRICS.)

DR. WM. GOODELL stated that the cause assigned (sudden hemorrhage into the cyst) was new to him. He thought favorably of the course pursued by Dr. Wiltshire in the case narrated by Dr. Parry.

DR. PARRY opposed tapping, as he believed that it would relieve the pressure upon the vessels of the cyst, and thus favor the continuance of the hemorrhage.

DR. JENKS read a paper upon "The Delivery of the Placenta."

In reply to a question of Dr. Ingham, Dr. Jenks said that he doubted if the, so called, hour-glass contraction ever occurred in the body of the uterus independently of placental adhesions.

DR. WM. GOODELL stated that he was not satisfied with any of the theories of placental delivery, and believed that even where there had been no traction exerted on the cord, the placenta was usually delivered in an inverted condition.

STATED MEETING, SEPTEMBER 7, 1871.

DR. HARRIS read his paper on "The Cæsarean Operation in the United States." (See AMERICAN JOURNAL OF OBSTETRICS, Nov. and Feb., 1871–2.)

STATED MEETING, OCTOBER 5, 1871.

DR. CURTIN presented a specimen of Hydatidiform disease of the chorion, and read the following history of the case:

HYDATIDIFORM MOLE.

L—— G——, aged 23 years. She is a small, delicate woman, who has always been healthy. She has been

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married 2 years, and during that time has menstruated regularly until about 3½ months ago. During the first month after the last appearance of her menses she noticed nothing unusual except that she was more drowsy than was her habit. Nausea and vomiting set in with the second month to such an extent that she could keep nothing on her stomach during the early part of the day, and in the afternoon only for ten or fifteen minutes. She rapidly lost flesh, and was soon reduced to extreme emaciation. Remedies were administered for this without relief. During the latter two and a half months she had a yellowish and at times a bloody discharge, grumous, accompanied by intermittent pains, during which the hemorrhage ceased.

I was first called to see her on July 6th, 1871, and found her in a very weak condition. Heart excited, frequent attacks of palpitation, and a distinct anæmic murmur heard on auscultation; pulse weak and frequent; skin drenched with a clammy perspiration; feet and legs œdematous; her general appearance suggesting the last stage of phthisic.

I examined her urine and found it entirely free from albumen. The nausea and vomiting ceased spontaneously two days before I first saw her, and were followed by a voracious appetite.

Upon an examination I found a tumor in her abdomen extending above the umbilicus. It was less pyriform than is ordinarily the case in pregnancy. It was firm to the touch, and dull on percussion. No sounds could be detected on auscultation, *i. e.*, the placental limit or fœtal heart. Ballottement by both methods also failed to elicit any information. Nothing like fœtal movements had been noticed.

Upon *vaginal examination* the uterus was found to be low down in the pelvis, the cervix obliterated. Os patulous, almost admitting two fingers; within it a soft pultaceous mass could be felt. No solid substance could be made out with the finger or by external manipulation. On removing the finger I found it covered with dark grumous blood.

The umbilicus was surrounded by a well marked areola, with a line shading off down the linea alba. The fovus was rather depressed. The left nipple was almost black and shriveled, but around it no change in color, in areola or follicles. The condition of the right nipple was the

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same as that of the left, but it had a well marked areola extending about half an inch from the nipple. It had no enlarged follicles. She informed me that about a month after her last menses her nipples commenced to grow dark, to swell, and to become so tender that the friction of her clothing caused much discomfort. This continued until about the end of the second month.

She was ordered tonics, iron, nourishment, with some brandy.

Four days after the above examination I was summoned, and found her bleeding profusely and with strong labor pains. The os was as before, but in it were loose masses of vesicles. I gave ergot, and in about three hours the os dilated to a diameter of about an inch and three-quarters, and the mass began to protrude from it. I found by firmly compressing the fundus of the uterus, that the mass oozed out rapidly, and in a few moments the uterus was emptied. On examination, the expelled body had all the characteristics of a hydatidiform mole. The parts were so little dilated that I could not determine positively whether the whole was expelled or not.

The ergot was continued every two hours.

The next day, as might have been expected, she had some fever. Three days after the expulsion of the mole she had improved very much. She had a very offensive discharge, and on making an examination I found the os still dilated, and I succeeded in removing a piece of the decidual part of the mole, about the size of a small orange.

She had at no time noticed vesicles in the discharges from the uterus.

From this time she recovered rapidly, only showing a tendency to swell about the lower extremities after leaving her bed; but in two or three weeks this disappeared. For two weeks before her delivery, and for one week after, she had perfectly white, chalk-like stools, notwithstanding she was taking full doses of iron.

No milk was secreted after the expulsion of the mole.

Dr. Wm Goodell was much interested in the history of this instructive case, and referred to a specimen which he had presented to the society about two years previously. All modern authors are agreed that the pathological changes in this disease take place in the chorion villi, but there is much variance of opinion with regard to the nature and cause of these changes. Despite Dr. Evory Ken-

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nedy's cases in alleged virgins, he believed the so-called vesicular mole to be invariably a product of conception, and never of a perverted attempt at partheno-genesis. Nor can it otherwise be unless the ovum of a virgin is capable not only of preserving a prolonged vitality in the uterine cavity, but also of developing chorion villi,—properties which cannot be conceded to the unfecundated ovum. Before the time of Cruveilhier, who first pointed out their characteristic differences, these cysts were thought to be true hydatids; but, except in Iceland, where, owing to the quality of food, these parasites attack every viscus of the body, true hydatids are very rarely found in the cavity of the uterus. Numerous theories had been broached to explain the formation of these vesicular bodies, but he would notice two only: 1, Mettenheimer, Paget, and other pathologists, attribute them to a diseased condition of the chorion, causing a cystic enlargement of the cells of the villi proper. From the cells on the outer surface of each cyst a new vegetation of villi sprouts out, which in turn is converted into cysts, and thus this process goes on *ad infinitum*. 2, Graily Hewett, on the other hand, holds that "in the hydatidiform mole we have not a new formation, but simply an alteration and degeneration of previously existing structures;" that this transformation takes place irrespective of the nucleated epithelium-cells, which cover the surface of the villi; and it is, therefore, not cystic in character, but each villus is merely distended with serum, the cells remaining unchanged. He argues, further, that the vitality of the fœtus beyond the third month of utero-gestation, determines the development of the chorion villi into placental villi; and that, if the embryo ceases to live before that time, the vitality of the chorion villi may be preserved if the decidua retains its attachment to the uterus; but that, owing to the loss of developmental power, the villi will then increase in size as hypertrophied villi, and not as placental vessels. So ingenious and plausible did this theory seem, that he (Dr. G.) had not only accepted it, but had, here and elsewhere, advocated it. Very recently, however, there had come to his knowledge a case of vesicular mole, which had shaken his canfidence in the correctness of Dr. Hewitt's conclusions. A lady, supposed to be far advanced in a pregnancy complicated with placenta prævia, was suddenly delivered of an unusually large mass of these vesicular bodies. The uterus

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was, to all appearances, thoroughly emptied, and yet, in a very few months, it rapidly developed in size, and again expelled a similar mass. For a third time did this happen, and it might have gone on indefinitely, had not the attending physician injected the womb with a strong solution of Monsel's salt. Now it seemed to him, that these full and successive crops of vegetations could be explained by no other than the cell-theory. For, there can be no absolute limit to the self-multiplication of cells; but, when a uterus is emptied of a hydatidiform mole, the few chorion villa left behind are definite in number; hence, unless it is conceded that they possess the power of reproduction, a limit by exhaustion must soon be reached. He concluded his remarks by calling attention to the two diagnostic points of this disease, so well shown in Dr. Curtin's case: First,—the size of the uterus was disproportional to the supposed duration of pregnancy. The woman thought herself to be only three months gone, yet Dr. Curtin found the uterine fundus far above the umbilicus; and it was this rapid distension which had produced in her those excessive constitutional disturbances. Secondly,—The persistence of a sero-sanguinolent discharge, alternating with hemorrhage, which had well nigh proved fatal. It is true that similar discharges are sometimes present in cases of erectile cancroid, and of polypus of the womb; but a vaginal examination would usually clear up any obscurity; whilst the slow growth of the one, and the peculiarly offensive discharges of the other should still further discriminate them.

Dr. A. H. Smith referred to an article by Dr. Madden, of Ireland, in which the disease was said to have occurred in virgins of irreproachable character.

Dr. Goodell replied, that the existence of chastity could never be positively affirmed, and, as even an intact hymen and other virginal tokens had been found in pregnant women, he was not disposed to admit as evidence, what was at best but a mere assumption.

Dr. G. Pepper asked, whether some such cases might not be explained upon the existence of a true hyditid disease of the uterus; a condition stated by Dr. Goodell to be not uncommon in Iceland, and of which a number of well authenticated cases had been placed on record.

Dr. Packard asked, if the death of the placenta usually followed promptly the death of the embryo.

Dr. G. Pepper replied that a placenta was often retained

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long after the expulsion of the embryo. He had presented to the Philadelphia society, some years ago, a specimen of hydatidiform disease of an embryo, that had been expelled immediately after the delivery of a fully developed and healthy child. He had deemed the case to be one of twin conception, with disease of one embryo, and if this basis was correct the vesicular mole must have retained its vitality for a number of months at least.

Dr. JENKS said that according to Virchow's classification the hydatid growths of the uterus are identical in character with other true myxomatous tumors. Normally each placental villus consists simply of an epithelial covering, the exochorion, and a matricular tissue, the endochorion, which is continuous with the mucous tissue of the umbilical cord. At first these villi are not provided with blood vessels, but subsequently they contain the well known capillary loop. In the hydatidiform degeneration of these villi, a proliferation of the cells of the investing epithelial layer undoubtedly takes place—but it is in their interior that the characteristic lesion of this affection is found,—the intercellular substance being converted into a clean, transparent, gelatinous tissue, which presents under the microscope all the characteristic appearances of a myxomatous tumor. The cellular elements of the endochorion may undergo a mucous degeneration, but this is not essential to the process and only occurs exceptionally. Virchow opposes the theory of Grailey Hewitt, that the death of the child is the necessary antecedent of the hydatidiform degeneration of the placenta—the chorion villi of which remain attached to the uterus and undergo a slow growth, their development having been arrested.

There is no proof that a retained placenta continues to grow, on the contrary judging from cases of retra-uterine pregnancy, when, for instance, the placenta has been found unchanged 25 years after conception, the presumption is that no such growth takes place. Again, there are many cases of partial myxomatous degeneration of the placenta, with a well developed child, which had lived until the later months of pregnancy. Nor, in these cases, is the peripheral portions of the placenta the only seat of the growth, but the central portions are also affected—as shown by specimens in the Berlin museum.

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CEREBRAL APPOPLEXY DURING LABOR.

Dr. PACKARD then related the following case: A married woman, 27 years of age, eight months advanced in her second pregnancy, was seized in the afternoon with what appeared to be an attack of acute indigestion. Dr. Packard was called in, and found her suffering from nausea and vomiting, accompanied by severe pain in the epigastrium and down the spine. After ordering some simple remedies he left, but, on his return at 10 P. M., found that she had had a number of very violent convulsions, and was profoundly unconscious. She was immediately etherized and labor induced by the introduction of a flexible bougie. The dilatation of the cervix being assisted manually, the long forceps were soon applied, and a still infant delivered without difficulty. The convulsions however, continued to recur at intevals of 13 minutes in spite of the free administration of the anæsthetics. Morphia was now used hypodermically and wet cups were applied to the nucha. At 4 A. M. of the following day there was a respite from the convulsions for 45 minutes, but they again recurred with increased violence, and at intervals of only 25 minutes, and the woman was evidently sinking rapidly. Dr. Wallace, who had been called, advised the use of a blister to the scalp, but all treatment proved ineffectual, and she died at 11 A. M. of the same day.

On post-mortem examination, the meninges of the brain were found deeply congested, and the tissue of the brain itself unusually vascular. A large clot was discovered resting upon the upper surface of the right cerebellum and extending deeply into its tissue. A smaller clot existed in a similar position upon the opposite side. There were also extravasations of blood beneath the membranes covering the upper surface of the central lobes and bloody serum in all the ventricles.

Dr. PACKARD did not know whether there had been any albuminuric complication in the case. He was inclined to think that early venesection might have been of great advantage, and asked the opinion of the society on this point.

Dr. LUDLOW asked Dr. Packard if his patient had lost more blood than usual during the labor, and after delivery.

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Dr. Packard thought that the loss was not more than is common.

Dr. LUDLOW had seen cases, threatening an attack of puerperal eclapmsia, in which the hemorrhage had been unusually profuse and the patients did well. He narrated the history of a case where the urine was albuminous, and the child putrid. The hemorrhage after delivery was very free, the patient though convulsed recovered thoroughly and quickly. In her second pregnancy he watched her very closely—the labor was an easy one, and after delivery he rather encouraged the hemorrhage. She however, suddenly passed into a convulsion and died. He stated that in his case there had always been most intense venereal orgasm during coitus, and the general hyperæsthetic condition of the genitalia seemed to him to play an important part in the causation of the convulsions.

Dr. PARRY said that the deductions, he had drawn from his own experience, were, that if the woman was albuminuric, pale and weak, he would not bleed, but trust entirely to anæstheties; whereas, if the woman was strong and full blooded even though the urine showed evidence of albuminuria he would bleed freely, especially would he do so in cases having their source in reflex irritation.

Dr. A. H. SMITH made some remarks upon the non-advisability of the rapid induction of labor in cases where convulsions came in before that process was established, and also condemned the practice of hastening labor in every case of eclampsia.

Dr. HARRIS read a paper upon "deformities of the female pelvis" which appeared in the AMERICAN JOURNAL OF OBSTETRICS.* He also showed Dr. B. F. Dawson's new clamp for securing the pedicle of ovarian tumors.

MEETING OF NOVEMBER 2, 1871. DR. R. P. HARRIS IN THE CHAIR.

FŒTAL DEVELOPMENT OF THE SEXUAL ORGANS.

Dr. JENKS presented a fœtus at the beginning of fourth month, and spoke at length with regard to the development of the male and female organs of generation, which he illustrated on the black board. Up to the sixth week,

* November, 1871, Vol. IV., No. 3.

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there is no difference as regards size or appearance in the glandular organs, situated on each side of the vertebral column, in close proximity to the Wolffian bodies, from which the testicles or ovaries of the growing embryo are to be developed. At this time, they appear between the Wolffian duct, and the generatic glands, a narrow cellular cord, the so called "cord" or "duct of Muller," which extends into the pelvis, gradually approaches its fellow—and by their subsequent union forms in the female the uterus and vagina—the divergent portion being converted into the Fallopian tubes. In the female, the Wolffian bodies gradually atrophy and are converted into the par-ovarium or organ of Rosenmuller.

The failure of the cords of Muller to unite through a greater or less portion of their opposing surfaces, explains the various forms of imperfect development of the uterus. such as the uterus duplex, unicornis, bicornis, &c.

In the male infant, on the contrary, the cords of Muller become arrested in their development, and are with difficulty reorganized in the so called uterus masculinus, or the vesicula prostatica; while the Wolffian bodies are converted into the epididymis, and the Wolffian duct becomes the vas defferens.

Dr. PACKARD asked, whether, in pregnancy, both cavities of a bifid uterus increased in size.

Dr. JENKS replied that both halves developed simultaneously.

A general discussion followed on the subject of the bifid uterus, and its relation to super-fœtation. Several cases of vaginal and cervical septa were detailed.

MEETING OF DECEMBER 7, 1871. DR. R. P. HARRIS IN THE CHAIR.

FACE PRESENTATION.

Dr. INGHAM read the notes of a case of face presentation, with the chin posterior, arrested at the superior strait; in which Dr. Jenks was called in consultation. In consideration of the fact, that the membranes had ruptured spontaneously over thirty hours before, the pains being feeble, and the woman growing weaker, it was decided to perform version by the feet, which he accordingly did. The delivery of a still born child was followed by a severe, and, for a long time, uncontrollable hemorrhage, which was finally checked, after ice and external compression

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had been tried in vain for over one hour, by the injection into the uterine cavity of a very weak solution of the persulphate of iron.

Dr. Jenks spoke at length concerning the propriety and necessity of version in this case, and also of the value of the persulphate of iron in post-partum hemorrhages, calling the attention of the Society especially to the weakness of the solution.

Dr. Ludlow said that eight years ago he had first used an injection of this salt in a case of metrorrhagia, and afterwards in a severe case of post-partum hemorrhage, stopping the loss of blood at once in both instances, after the usual means had been tried in vain.

He had used a much stronger solution than the one referred to by Drs. Jenks and Ingham, and would not hesitate to inject the pure solution, so firmly was he convinced of its harmlessness, not having ever seen a bad symptom result from its use. He also mentioned a case in which a severe post-partum hemorrhage was promptly arrested by the act of emesis occurring after the administration of ergot, and believed that an emetic might be of use when other means failed, and the Monsel's salt was not at hand.

Dr. Parry remarked that he had previously reported a case in which a resident of the Philadelphia hospital, misunderstanding his directions, had injected four ounces of the pure solution of persulphate of iron into the uterus, without a bad symptom following.

Dr. Page favored the use of the Monsel's salt in these cases, and did not believe that it could be productive of any injurious results, especially as the severe treatment to which the uterus was now subjected by gynæcologists indicated a great tolerance on the part of that organ. He would, however, like to inquire whether proper means had been taken to secure the descent of the head by either forcing the chin to rotate entirely, or by bringing the occiput down, and so changing it into a vertex presentation. For he believed, that if the hand could be introduced far enough into the uterus to grasp the feet, there could be no difficulty in changing the presentation of the head.

Dr. Jenks replied that the effort had been made, but that it was found impossible to change the presentation, as advised by Dr. Page, owing to the absence of the liquor-amnii and the consequent firm contraction of the uterus.

Dr. Goodell, while admitting the advantage of such a conversion, had found that practically the difficulties were often so great as to render version by the feet necessary in the majority of cases attended with arrest at the brain. He was

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strongly in favor of the Monsel's salt in post-partum hemorrhage, and cited several cases in which it had been productive of the happiest results. He believed that there was some little danger attending its use, and was, therefore, glad to learn that it had proved efficacious in so weak a solution. In regard to the effect of emesis, as mentioned by Dr. Ludlow, he knew of a case in which an emetic dose of sulphate of zinc had acted promptly in arresting a dreadful post-partum hemorrhage.

Dr. Ludlow agreed with Dr. Goodell as to the difficulty of changing a face into an occipital presentation, and believed it to be in most cases easier and safer to perform podalic version.

A general discussion then ensued upon the action of emetics in exercising a hæmostatic influence, after which Dr. Harris called the attention of the Society to the comparative results of the Cæsarean operation in England and America.

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TRANSACTIONS

OF THE

Philadelphia Obstetrical Society.

VOL. II., 1872-73.

Reprinted from the American Journal of Obstetrics and Diseases of Women and Children.

NEW YORK:
WILLIAM WOOD & COMPANY,
27 GREAT JONES STREET.
1873.

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205-213 *East 12th St.*,
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* Died Sept. 14th, 1872.

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AN ADDRESS

DELIVERED JANUARY 2d, 1873, AT THE FIRST MEETING OF THE ANNUAL SESSION OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

By WILLIAM GOODELL, M.D.,
President of the Society.

GENTLEMEN: At the beginning of a new session and at the close of your president's term of office, it seems very appropriate for him to sum up the work of the society for the past year—to take, as it were, a count of stock, and to exhibit a balance-sheet to all the partners of this scientific enterprise. Hitherto this has not been done, and I shall, therefore, in addition give you a short sketch of the history of this society.

The want of an obstetrical society had long been felt by many of the leading physicians of this city, and there had been some talk of forming one. But it is mainly to the energy of the late Dr. George Pepper and to the zeal of our esteemed associate Dr. A. H. Smith that you are indebted for the creation of this society. After due consultation with their friends, these two gentlemen addressed a circular to a number of the profession, and invited them to meet on the 6th of June, 1868, at the office of Dr. A. H. Smith, then at No. 113 South Broad street. The names of those who responded to this call were: Lewis Rodman, Francis Gurney Smith, Jr., Elwood Wilson, Lewis D. Harlow, Thomas G. Morton, Robert

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P. Harris, D. Murray Cheston, James F. Wilson, George Pepper, Albert H. Smith, and William Goodell. At this meeting a committee was appointed to draw up a constitution and to frame a set of by-laws. On the 19th of the same month, and at the same place, the second meeting was held. The number then present is not stated in the minute-book; but twenty-eight names appear on the roll as members of the society, which was on that evening formally organized. At that meeting Dr. Francis Gurney Smith, Jr., was chosen to be the first president, and Dr. George Pepper its first secretary.

Dr. F. G. Smith, Jr., was succeeded in office by Dr. Robert P. Harris, and I have the honor of being your third president.

Dr. George Pepper was annually reëlected to the Secretaryship, but, his failing health compelling him to resign, he was succeeded, in 1871, by our present efficient secretary, Dr. James V. Ingham.

Since the evening of the organization of this society the meetings have been held in the building of the College of Physicians. Since that time also, 39 members have been elected, as follows: 3 in 1868; 4 in 1869; 10 in 1870; 9 in 1871, and 13 in 1872. Of the 11 persons present at the first meeting, 1 was subsequently dropped for non-payment of dues, and 1 died. Of the 28 who organized the society, 2 have resigned, 2 have been dropped from the roll, and 2 have died. Of the 39 who have since been elected, 1 has resigned, 1 has died, and 2 did not recognize their election within the time specified by the constitution.

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The number of resident members is now 56; of honorary members we have but one, and of corresponding members none. The average attendance at the meetings was in 1868 and 1869, 11; in 1870, 10; in 1871, 12, and last year, 16. For these interesting facts I am indebted to the kindness of your secretary.

As I look back upon the small beginning of this society and contrast it with its present condition, I cannot but congratulate you upon its success. From the outset this has been a working society. In no other in this city are the members so active and industrious; in no other do so many of the older members of the profession lend the weight of their presence, and the aid of their experience. At first we had to seek for associates; now a membership in our society is sought after by our professional brethren both at home and abroad. Our ranks are therefore steadily increasing in number. But, alas! death has also been busy in our small circle. During the past year two of our best known associates have passed from us. Of them it becomes my sad duty to give an obituary notice.

Dr. Augustine H. Fish, the youngest son of Benjamin and Maria Fish, was born in Trenton, N. J., in the year 1828. He received his early education at the classical school at Lawrenceville, and entered the Sophomore Class at Princeton College in 1845, from which he graduated in 1848. In the same year he matriculated at the Medical Department of the University of Pennsylvania, Dr. George B. Wood being his preceptor, and received the degree of doctor of medicine in the spring of 1851. The subject of his thesis was "Delirium Tremens."

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Subsequently he spent a year and a half in the Philadelphia Hospital. In 1854, he married Sarah P., the second daughter of the late Rev. Dr. Cheeseman, and in the same year commenced the practice of his profession in Vine street, above Sixteenth, where he continued until his death, which took place on the 3d of August, 1872.

Early in his professional life he undertook the arduous labor of attending to one district of the Philadelphia Dispensary, and repeatedly during that time took charge of two, making over 6000 gratuitous visits every year. Later he became the attending physician to the Howard Home, and a most active and zealous member of the medical staff of the Charity Hospital. During the war of the rebellion, in addition to these responsible duties, he received the appointment of acting-assistant surgeon in the Saterlee U. S. General Hospital.

He early became a member of the Philadelphia County Medical Society, was for three years its assistant secretary, then one of its censors; afterward for many years its treasurer, and finally, in 1871, was elected to the honor of being one of its vice-presidents. He was also a member of the Pathological Society and of the College of Physicians. The library of the latter was his special delight, and he was hardly ever without some of its books. So fond of reading was he that, in addition to a very choice library of his own, he belonged to two library associations of general literature. To his great honor be it said, he was the originator of the "Medical Periodical Club of Philadelphia," which was the parent of all the present numerous journal associations of this city. This alone should make his memory dear to his

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professional brethren. So enthusiastic was he upon this useful work that even when his labors were so great that he never could avail himself of the advantages afforded by the Journal Association of the College of Physicians, he was a constant subscriber to it. Although terribly harassed by a most extensive and unremunerative practice, he always found the time to keep up with the literature of the day.

The high tone he took on matters regarding the honor of the profession was so well known to his professional brethren, he was often called in to decide delicate questions of ethics. No man was more kind and assiduous in his attentions to the poor; he indeed made himself almost their slave, in spite of the earnest remonstrances of his friends. When yet struggling to attain a competence, he happened one day to be in attendance upon a gratuitous case of confinement. While thus occupied, he was twice summoned—the last time with the threat of dismissal—to attend one of his few wealthy patients, also in labor. He nobly refused to leave the bedside of the poor woman, and thus lost a good fee, and, what was worse, his attendance upon a family to which he sent his heaviest bills.

His obstetric practice was very large indeed; he averaged 130 cases of labor each year, and attended 157 cases during the year 1871, besides being called in to help other physicians in their cases; for he was extremely successful in all obstetric manipulations, made frequent use of the forceps, and, from the very small size of his hand, could perform version long before his equals in skill. His death is attributed by his friends to the

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fatigue and loss of rest consequent on his large obstetric practice and consultation cases.

He early became a member of our own society, and, although he rarely spoke at its meetings, took the liveliest interest in its proceedings. But, however reticent in public, he was a most affable and generous host. Some of us will not soon forget the pleasant gatherings under his roof and around his hospitable table. Later in the spring, without any premonition or predisposition, he was seized by the disease (phthisis) which ended his life. During his brief illness he made a profession of his faith in Christ, received the rite of baptism, and passed away with words of love and faith upon his lips. He died at a hotel in Cooperstown, N. Y., where he had been carried for his health.

The other associate whose death we mourn was the beloved Dr. George Pepper. He was born in Philadelphia on the 1st of April, 1841, and in the same city was wholly educated. Entering the Collegiate Department of the University of Pennsylvania in September, 1858, he graduated in July, 1862. He at once began the study of medicine in the office of his father, the late Prof. William Pepper, M.D., of the University of Pennsylvania, one of the most distinguished physicians of his day; but, like many of our patriotic youth, he abandoned it to enter the army. On the 15th of the following September he enlisted as a private in the Sixth Pennsylvania Cavalry, better known as Rush's Lancers. His abilities, however, being soon recognized, he was shortly afterward promoted to a lieutenancy. He passed through many of the hardships and dangers of war, and

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was under fire at the terrible battle of Fredericksburg. In spite of the suffering and privation incident to that campaign, the out-door life proved of great benefit to him. His health, previously shattered by a sharp attack of pleurisy, and by a desperate illness from acute nephritis, became so robust that it was his purpose to serve his country until the rebellion was quelled. But in the following spring, while on a scouting party, his left clavicle was badly dislocated by a fall with his horse on the ice. This accident disabled him from active service, and on the 22d May, 1863, he received an honorable discharge.

Upon his return home, he at once resumed the study of his profession; entered the Medical Department of the University of Pennsylvania in October, 1863; received his diploma in March, 1865, and, on the 29th of the same month, married a daughter of the late George M. Wharton, Esq., a leading member of the Philadelphia bar. Soon after this he obtained a district from the Philadelphia Dispensary, and, during his term of service, faithfully discharged its onerous duties. Taking a great interest in the higher studies of his profession, he early became a member of the Pathological Society; for some time held the office of its treasurer, and contributed numerous short papers to its proceedings. While yet a mere youth, he gained an election to the College of Physicians and to the Academy of Natural Sciences. Apart from a membership in these active societies, he was made a corresponding member of the Gynæcological Society of Boston, and was honored by several official positions.

For several years he was the sole physician to the

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Magdalen Home. As one of the assistant physicians to the Nurses' Home, he gained great experience as well as reputation in obstetric manipulations. At this institution he gave clinical instruction on the diseases of women to large private classes. He also delivered a course of didactic lectures on the same subject at the Jayne Street Medical Institute. In addition, as the assistant of Dr. J. Forsyth Meigs, at the Pennsylvania Hospital, he took elaborate notes of every interesting case, and contributed to the Hospital Reports for 1868 an admirable paper upon a case of retroversion of the womb, complicated by a large fibroid. A few months before his health began to fail, he won, after an exciting contest, an election to the Philadelphia Hospital as one of its accoucheurs. Those of us who knew him well, will recall the joy he expressed in gaining so coveted a position on the staff of this magnificent hospital. What diagrams were drawn by his skilful pencil, what elaborate lectures he had written out, and what earnest plans he had laid for imparting clinical instruction to the students who throng its wards! Little did he or we think that this was not to be.

His life, spent in obtaining and in imparting knowledge, was a busy one; but it had its reward. Few physicians have ever acquired so remunerative a practice in so short a time. By common consent he was conceded to be the rising obstetrician of this city; and deservedly, for no one had prepared himself so thoroughly in that branch of the healing art. No one in this city had collected so complete a set of obstetrical instruments and of those for the surgical diseases of women.

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In the spring of 1871, he was laid low by a lingering attack of typhoid fever. From this he convalesced so slowly that he was sent to spend the summer at the family country-seat in Chestnut Hill. Thanks to the unremitting care of his brother, Dr. William Pepper, to whom he was warmly attached, he was so far restored to health as to resume his practice in the autumn. Three months later, on the 12th of November, he was seized with an extremely severe influenza, followed in a few days by an inflammation of the left lung. His sickness was lingering and marked by many alternations of condition. Early in May, he was again moved to Chestnut Hill. where, after an illness of ten months, he died on the 14th, of September, 1872. Thus, in the first flush of manhood, at the early age of 31, passed away our greatly beloved friend and associate, leaving a wife and two children to mourn his loss. He was buried in Laurel Hill Cemetery, and at his funeral this society was largely represented.

In an annual address, more can scarcely be given than a mere sketch of the life of a departed member; but Dr. George Pepper was so identified with the history of this society, and withal so highly esteemed, that I need not ask your indulgence for a little more than the customary obituary notice.

Early attaching himself to obstetrics and to the diseases of women, he sought in every way to perfect himself in those branches. His name appears on the honorable roll of the founders of this society; but he was more than that—he was one of its prime originators. As such his memory should be cherished by us. Upon the

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night of its organization he was chosen to be its first secretary. To this office he was annually reëlected until his protracted illness compelled him to resign. How rarely absent he was from his post; how pleasantly and efficiently he performed its duties; how lively an interest he took in the welfare of this society, and how often and how ably he participated in its debates, all are still fresh in your memory. To our Transactions he contributed two valuable papers—the one "Adipose Deposits in the Omentum and Abdominal Walls as a Source of Error in Diagnosis," the other on "The Mechanical Treatment of Uterine Displacements." His numerous remarks and observations there recorded bear witness to the wide range of his information, and the keen interest he took in this chosen branch of his profession. By his death we have lost our most active member and our staunchest supporter.

His great artistic talent, his mechanical ingenuity, his singularly retentive memory, his industry and enthusiasm in the pursuit of knowledge, gave promise of the highest attainments. No young physician had a more certain future before him. His practice was rapidly growing; his reputation as a teacher increasing; his skill and counsel were beginning to be sought after by his professional brethren, when an inscrutable Providence cut short this brilliant career.

While greatly admiring the intellectual qualities which he possessed in so high a degree, I love still more to think of the qualities of his heart. The charming simplicity and guilelessness of his character, his genial hospitality, his warm affections and abiding friendships, endeared him

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to a very large circle of friends. During his last illness, the love with which he was regarded sought expression in numberless gifts and constantly repeated delicate attentions. No sick-chamber was ever so lavishly decked with flowers; no bedside so surrounded by every device that art could contrive or money purchase, for the comfort and cheer of an invalid. It was in a meeting of the College of Physicians that I first met George Pepper. His tall figure, handsome face, highly intellectual countenance, and gentlemanly bearing immediately attracted my attention, and I at once sought an introduction. But it was in this hall that I first learned to know him and to love him. A common interest in the welfare of this society, the transaction of its business, like pursuits and congenial tastes threw us much together, and this acquaintance, despite the disparity of our ages, soon ripened into a warm friendship.

His death I feel keenly; we all shall sadly miss him—very sadly indeed. But this grief is not ours alone; there are others to whom his death brings far more bitter pangs. It is not for us to violate the sanctity of home-griefs; but I may say that no husband was more devoted, no father more kind, no son more affectionate, no brother more beloved than our departed friend. Few men loved his kindred so warmly and so unselfishly; no one was in return more loved.

It was my privilege to see much of him during the long and weary days of his illness, and many a time did he ask after the welfare of this society, and after its members by name. His sufferings were great, his frame reduced to a most pitiable condition of emaciation and

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weakness. When it was day, he longed for the night, and when it was night, he longed for the day; but words of impatience, words of complaint, I never heard pass from his lips. When it was but too evident that the last enemy was approaching, he calmly arranged his affairs, gathered up his strength for a last farewell, and died in the abiding faith of a Christian, and in the hope of a glorious resurrection.

O vita, stulto longa, sapienti brevis!

From this sad tribute to the memory of our deceased associates, let me pass to a review of the year's work of the society. As regards the original papers read, the observations communicated, and the morbid specimens presented to it, you will agree with me that, while the first have been too few, its transactions in the aggregate show good work, and a yearly increase in bulk and value. That much has been done by you worthy of permanent record, is attested by the abstracts taken from your proceedings, and the quotations *in extenso* of your discussions, which are constantly appearing in the medical periodicals of this and other lands. For the collection of material for these Transactions, and for their careful preparation for publication, you owe much to the late Dr. George Pepper, to your present active secretary, and to the publication committee, who have all worked faithfully to this end. Let me here pay a passing quittance of thanks to Dr. B. F. Dawson, of New-York, for his unfailing courtesy in all matters relating to the publication of our Transactions in the columns of his magazine, *The American Journal of Obstetrics and Diseases of Women and Children.*

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Of the few papers read before you, there was one of great merit by Dr. J. S. Parry, advocating the Cæsarian section whenever the conjugate diameter is under two and a half inches. This valuable contribution has not yet been published, nor will it be until the author has collected from all parts of this land the data necessary to sustain his thesis. The bold and original views enunciated in this paper startled some of us; but perhaps, in this matter as well as in others, we have been too servilely following the traditions of the elders. From my pen you had an historical paper upon some ancient methods of delivery. These, gentlemen, I am sorry to say, comprise the only papers read before you; but, on the other hand, there were several admirably reported cases and carefully digested discussions.

One discussion on a case of extra-uterine fœtation will, I believe, throw light upon the diagnosis and treatment of this obscure and fatal accident of conception. In it were shown: first, the very striking resemblance of the symptoms to those of a retroversion of the gravid womb; so striking, indeed, that several members had attempted, in the cases which they had seen, a reposition of the presumedly displaced organ. Secondly, that the expelled decidual cast of the womb had frequently been mistaken for the blighted ovum of an abortion; and thirdly, that the paroxysms of pelvic pain, so common an accompaniment of this *error loci*, had been taken for attacks of localized peritonitis. The destruction of the ovum, in two undoubted cases, by electricity, not only casts great credit upon the skill and ingenuity of Dr. J. G. Allen, but also gives promise of a larger measure of success in the treat-

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ment of this opprobrium of our profession. An interesting case of vesicular mole started up a discussion in which was given a *résumé* of the latest views of pathologists in regard to the nature of this curious form of degeneration.

Perhaps the most important of all the discussions was the one on the early use of the forceps, the method of application and the mode of traction. This was continued for several meetings by quite a large number of the members, of whom very few gave the secretary abstracts of their remarks. This I regret, because the scope of an instrument so valuable to mother and child deserves to be accurately defined, and what better way to determine this can there be found than by sifting the arguments evoked by the freedom of debate? Although widely divergent views were set forth, and pet theories sustained by the disputants, this discussion was carried on with the utmost harmony. If one of the active participants can be trusted to make an impartial summary, the various arguments advanced at those meetings may, I think, be narrowed down to the following propositions: that the earlier the application of the forceps the better will it be for mother and child; that when the Hodge or other compressing forceps is used, the blades should be applied to the sides of the child's head; that when the German or other non-compressing forceps is resorted to, the blades should be applied with relation to the curve of the pelvic axis rather than to any special diameter of the child's head.

In the presentation of morbid specimens and in the relation of cases, the past session has been unusually

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rich. Dr. J. S. Parry laid before you a specimen of primary cancer of the vagina, a disease so infrequent that this case is the second one only which has been brought to your attention. The same gentleman exhibited a cancer of the fundus uteri, and also related a case in which he had removed the cervix uteri similarly diseased. Through the courtesy of Dr. C. W. Perkins, since elected a member, you were afforded the rare opportunity of seeing a remarkable specimen of ventral pregnancy. Dr. William B. Atkinson kindly permitted me to show you a womb which, although containing a mural fibroid as large as a fully developed fœtus, had yet carried a child up to term.

Dr. R. G. Curtin presented a vesicular mole, and also an ovarian cyst, which he had removed by the short incision. Each specimen was accompanied by a very interesting clinical history; but I refer to that of the latter more especially, because it is the first and only case of ovariotomy reported to this society. Thus far Dr. Curtin holds the honor undisputed; but, judging from the enthusiasm with which some of you are working up the science of gynæcology, I am sure that it will soon be shared by others.

Dr. J. L. Ludlow brought us an ovarian cyst which had been removed after death, and which had not attained a sufficient size to be recognized during life. Very instructive specimens of perimetritis, shown by Drs. A. H. Smith and William F. Jenks, led to interesting remarks upon the effect of this disease in producing unyielding displacements of the womb. A noteworthy feature in these specimens was the condition of retroflexion in

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each womb, and the fact, also in each, that an ovary was glued, like a sub-peritoneal fibroid, to the posterior wall. In this relation, let me modestly advert to a case related by myself of adherent placenta and pelvic abscess in a cow. Dr. J. H. Packard exhibited a uterine polypus which he had removed shortly after the delivery of one of his patients. This started up a discussion upon the propriety of removing these growths from the gravid womb, the sense of the members being to let them alone, unless the hemorrhage or their size was great. A cystic tumor of the labium majus, removed by the same gentleman, brought up several of you on your feet. From the remarks that ensued it was elicited that, from its apparent disappearance upon pressure, and from the impulse communicated to it by the act of coughing, this kind of tumor had at first been invariably mistaken for a hernia. Dr. Wharton Sinkler reported a case of abortion and showed us the gritty placenta detached by a blood-clot. At our last meeting, you had from Dr. J. V. Ingham the ovum and uterus of a woman who sank rapidly after an abortion in the sixth month of utero-gestation. This most valuable specimen not only showed very clearly a fatty degeneration of the placenta and membranes, but it conclusively proved the hypertrophic elongation of the cervix in pregnancy.

Through the able management of the treasurer, Dr. D. Murray Cheston, the finances are in a prosperous condition. His long-continued illness deprives us, this evening, of the pleasure of listening to his annual report. I shall, therefore, briefly state that a reserve fund of $300 is prudently invested, and that our income exceeds

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our expenses by nearly one half. At the instance of your council, you wisely decided at your last meeting to raise the annual tax to three dollars, and to devote the surplus funds to the construction of a cabinet for the collection of instruments, and to the creation of a museum for the preservation of specimens. Let me congratulate you upon this important decision. Great events start from small beginnings; and this timely act may produce results such as shall not only reflect honor upon us, the founders, but benefit others who in coming time will fill our places and know us only by name.

To another act of this society I advert with very great pleasure. For four years you declined to elect honorary and corresponding members. It was your wish not to confer these titles until the society had gained such a position as would make them coveted. Within the past year so numerous have been the requests for membership from non-resident and foreign physicians, that at your last meeting you decided that the time had come to change this modest policy. By prescriptive rules, honorary members should not be residents. But, by a unanimous vote, you resolved to waive for once all precedent in order to do homage to the fame and genius of one great man, whom age and blindness prevent from presiding at your meetings. By electing the venerable and distinguished Hugh L. Hodge to be its first honorary member, the Obstetrical Society of Philadelphia has received far more honor than it has conferred. After making this good beginning, you appointed two committees: the one to design a seal and diploma; the other to present for membership the names of men distinguish-

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ed for their attainments in branches of knowledge belonging to the province of this society.

From these proofs of the industry and prosperity of the society, I turn now to matters affecting its welfare. From the outlook which a presiding officer gains, he often sees shortcomings which escape the notice of others. Permit me, therefore, to pass from words of praise and cheer to a few suggestions for the better working of this society. Its thrift I have so much at heart that no excuse need be offered for this liberty.

In the first place, then, we have no short-hand reporter to take down our debates, and they are, therefore, imperfectly reported. To remedy this defect, and to relieve our efficient and hard-worked secretary from much of the drudgery of his clerical labors, I would urge it upon the members to furnish him with abstracts of their remarks, and that as soon as possible after they have been made. Otherwise, the close attention which he is compelled to pay to the merely mechanical labor of writing necessarily debars him from taking an active part in our discussions. The duties of a secretary are sufficiently onerous without adding to them those of a reporter.

May I call attention also to the fact that while the character of our debates has been well sustained, the number of the participants is limited? Due notice of the evening's discussion is given, and yet few members come prepared to take an active part in it. This is not as it should be. Debate is the very life of a society such as ours; it is the collision between the flint and steel that begets the spark; it is fermentation that works off and deposits impurities. Further, too many of the members

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are reticent, and their interest must necessarily flag. All should strive to do something for the common good. No matter how young or inexperienced a member may be, he can often report some carefully observed case or ask a question on some doubtful point. Our meetings should be of such a character as to permit its members freely to ask information from one another. We come here not to criticise, but to learn, and we can best learn by teaching one another.

Bear with me while I touch upon another matter, and believe me that I do so with great reluctance. I have, however, chosen the prosperity of our common society as my text, and this must be my excuse. In all well-ordered societies certain customary formalities are rigidly adhered to. It is the pomp and circumstance of an army that preserves its *esprit de corps.* It is the vesture of authority that gives majesty to authority. By neglecting certain necessary, although seemingly trivial accessories, we are in danger of losing our vitality. For example: the night of our annual election is—so to speak—a *dies non.* Instead of that meeting being the best-attended one of the season, barely is a quorum present. As a remedy to this, I would diffidently suggest the observance of some degree of ceremony both in retiring the out-going president from the chair, and in inducting the president-elect into it. It appears to me very appropriate that the one should deliver an annual address as his final official act, and that his successor, upon taking office, should give a short inaugural. An election to the chief office in the gift of a society certainly merits the thanks of the successful candidate; while nothing so quickens the zeal of the mem-

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bers as a summary of its half-forgotten year's work. Hitherto this has not been done, and for a very good reason. By your constitution your president holds office for but a single year; after which he becomes a candidate for reëlection. To the natural delicacy of every right-thinking man this rule offers but one of two choices; either that of his staying away on the night of the annual election, or that of his declining to run as a candidate for reëlection. Out of this embarrassment I see no escape, unless you rescind this rule and make the term of office expire by limitation. This or some other relevant change in your Constitution I earnestly offer to your consideration.

One more suggestion and I have done: the mission of such a society as ours is without end and without limit. Apart from educating its members, it ought to educate the masses. By giving the best to the most it will become in the land a power for good. There are social problems of the day which we ought to confront. Perhaps the time has not yet come for us to grapple with all; but one there is which urges itself upon our attention. During the heated term of the past summer hundreds of homes were made desolate. The acres of God that belt this great city were furrowed with thousands of nameless little graves. So appalling was this calamity that patriots and philanthropists joined hands in giving to the children of the poor the means of breathing pure country air. Thanks to these free excursions, many lives were saved. But more than this was needed. Had the public been acquainted with a few simple laws regulating the health and the diet of children, this terrible scourge

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would have been averted. Why should not this Society step in to supply this information to the masses? What better proof could it give of its intrinsic worth and of its public-spiritedness than by defending the fireside and by aiding the State? In view of these arguments, which must appeal to the good sense of my hearers, I urge upon you the timely appointment of a committee to draft some simple rules for the better rearing of children, to put them into a cheap pamphlet-form, and to distribute them gratuitously to all the dispensaries of this city early in the coming spring. In giving them a wide circulation you would have the hearty coöperation of all the daily and weekly newspapers; while the expense incurred would be more than compensated by the good attained and by the lasting gratitude of the community.

The hour has now come for me to yield up the office which I have held for the past year; but it would ill-become me to leave this chair without thanking the Secretary for his friendly promptings, and you for your kind support and forbearance.

Gentlemen, the future of this society rests with us. May its prosperity ever be our watchword and our bond of brotherhood! Working in the spirit of truth and with a singleness of purpose, we cannot but attain success—that success which is born of unity and of resolve.

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THE COMPARATIVE MERITS OF CRANIOTOMY AND THE CÆSAREAN SECTION IN PELVES WITH A CONJUGATE DIAMETER OF TWO AND A HALF INCHES OR LESS.

BY JOHN S. PARRY, M.D.,
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THE questions which it is proposed to discuss in this paper are among the gravest which can occupy the attention of the obstetric surgeon. In no branch of medicine do the problems which claim the consideration of the medical practitioner demand calmer judgment and nicer discrimination than those which are presented to the accoucheur for solution in such cases as these. Brought, as he is, to the bedside of suffering woman in the most trying moment of her existence, it is his duty at the best to undertake a most formidable operation. In the one case it is necessarily sacrificial, and in the other the risks are so grave that it can hardly be deemed conservative in its character.

No question in midwifery demands more careful investigation than this one, and its consideration has to be approached without parade or sentimentalism. Facts plain and unvarnished are demanded for its elucidation, and, singular as it may seem, these, so far as Cæsarean section is concerned, have been investigated with considerable care; but, as regards craniotomy in extreme pelvic deformity, the case is very different, as will become apparent as we progress in the discussion of this subject.

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Some may question the propriety of making one clinical history the subject of a paper such as this is; but, as an excuse, it must be remembered that it rarely falls to the lot of one man to be called upon to deliver many women with pelves of two inches and a half or less in the conjugate diameter. It is more than probable that the statistics of the private practice of our most busy accoucheurs would prove very surprising.

Fleetwood Churchill, at the close of his busy and active life, tells us* that he has only performed craniotomy seven times in his private practice, which comprised the delivery of 2547 women, and of these only once for pelvic deformity after the failure of version.

These facts, with the hope that it may be the means of obtaining valuable information from others, seem to furnish a sufficient excuse for the preparation of this paper.

At the very outset of these remarks, it should be distinctly stated that nothing whatever will be said of minor deformities. Labor in women with a conjugate diameter of two and a half inches or less will alone claim our attention.

The following is the history of the patient who has been alluded to:

Narrow pelvis in a rachitic girl—Antero-posterior diameter one inch and a half—Embryotomy—Recovery.

Josephine Scott, aged about 24 years. Colored, single.

Previous history.—She was first pregnant some time before 1869, when she miscarried about the fifth month

* Dublin Jour. Med. Sci., June, 1872.

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of gestation. The child was expelled without any difficulty, and no physician was with her until afterward.

In 1869, she again became pregnant. She fell into labor at full time in the obstetrical ward of the Philadelphia Hospital, under the care of my colleague, Dr. R. M. Girvin, who, in his notes of her delivery, states that the conjugate diameter of her pelvis is under two inches.

In January, 1872, she was again admitted to the lying-in wards of the Philadelphia Hospital. She could give no definite account of herself, and did not know how far her pregnancy had progressed. She is a dwarf in stature, being only fifty inches high. Has been profoundly rickety in her infancy, though the distortion of the extremities is not very remarkable. Her thighs are bent forward at their middle, and the tibiæ are moderately crooked. The length of the arm from the acromion to the end of the middle finger is 22½ inches. From the upper margin of the great trochanter to the heel, following the curves of the limbs, is 24½ inches. From the same point to the middle of the patella is 12 inches. From the middle of the patella to the outer malleolus is 12½ inches.

The pelvis was carefully measured upon several occasions with the finger, and with both King's and Lumley Earle's pelvimeters. The antero-posterior diameter of the superior strait is only one inch and a half, while the transverse is a little less than four inches. The promontory of the sacrum projects so far forward that the pelvic cavity seems to be filled by a bony tumor. The right half of the pelvis is rather larger than the left. These facts were confirmed by repeated examinations.

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The os uteri was very high up, almost out of reach of the examining finger, and was hard, irregular, and almost cicatricial in feeling.

The duration of gestation could not be determined with any certainty, because the girl could furnish no reliable information in regard to it, and the organs were so displaced on account of the pelvic deformity. She remained well until the 14th of March, 1872, when, upon consultation, Dr. Girvin and myself concluded to induce premature labor, not with the hope that a living child would be born, but simply to render the operation of craniotomy more easy. The os uteri was patulous, and a Barnes' dilator was introduced with great readiness; but it burst when distention was commenced. As no other was at hand, the operation had to be postponed. Dr. Girvin separated the membranes to a considerable extent, so that it was hoped that labor-pains would supervene. We therefore agreed to meet at 8 P.M. the same evening.

8 P.M.—Dr. Girvin was prevented from meeting me—a fact which I had great reason to regret, as his aid and advice would have been most serviceable, since he had already delivered the same woman at full time. During the afternoon, she had had pains at irregular intervals, and the os uteri was found to be dilating quite rapidly. It was too late to stop; so she was fully etherized, and the operation commenced in the presence of my colleague Dr. Duer, and Drs. Jenks, Ingham, the resident staff, and a number of medical students.

To complete the dilatation, the largest Barnes' dilator was introduced and fully distended; this, with the ether-

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ization, occupied about forty-five minutes. The head was in the first position of the vertex, was very high up, and was reached with the greatest difficulty. At a quarter before 9 P.M., a pair of Smellie's scissors was passed up and the head was opened, while Dr. Duer steadied it by placing his hand over the mother's pubis. Perforation was effected with great difficulty, because the head was so very high and so movable. Notwithstanding it was supported by Dr. Duer, it would recede before the instrument, which, after being started, did its work almost without being guided by the finger. Hodge's perforator was tried, with the hope that it would prove better, but it was soon abandoned, and Smellie's resorted to again. Two openings were made and afterward united—both through the right parietal bone. The brain was thoroughly broken up, and washed out by a copious stream of water.

The crotchet was applied, and firm traction made both by Dr. Duer and myself; but the head could not be brought down or made to engage at the superior strait.

An attempt was now made to apply Braxton Hicks's cephalotribe. The first blade, the one to the left side, was easily applied, though this was the narrow half of the pelvis. The right blade was introduced with the greatest difficulty. It passed up sufficiently far, and locked easily enough, but this could not be effected without sacrificing the finger as a guide. There was not sufficient room in the cavity of the pelvis, with the first blade in position, to allow the right or second blade to pass along the fingers as a guide.

It was, therefore, deemed unjustifiable to resort to any

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harsh measures to grasp the child's head. In spite of all that could be done, the second blade would enter the orifice made by the perforator, and, pushing the head before it, would carry this away from the other blade. An attempt was now made to seize the head with Simpson's cranioclast, but this likewise failed. Nothing was left us but to slowly pick the skull away with Meigs's embryulcia forceps. This was, indeed, an arduous task. Dr. Duer and myself worked away for the next hour, but neither of us was able to effect much. The pieces of bone removed were very small, only what were held in the grip of the forceps. The same was true of the cranioclast. It could only be applied with the utmost difficulty, and then tore out, bringing away a small piece of bone between the blades. The head could not be made to engage with the crotchet and combined pressure over the pubis.

These efforts were continued until after eleven o'clock. The woman had been under ether since eight. Her pulse was growing weak, her respirations were rapid and irregular, and her lungs filled with mucus, and the extremities cold. It was painfully evident to all present that the girl's condition was becoming very serious.

Another attempt was now made to apply the cephalotribe. The first blade was in position, and the introduction of the second was almost finished, when one of the gentlemen present leaned over me and whispered that he thought the first one had passed through the uterus into the peritoneal cavity. About the same time the handle of the instrument was thrust backward upon the perinæum, when the outline of the opposite extremity

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was very clearly mapped out as it pressed the anterior abdominal wall forward. At the same instant I felt through the vagina what appeared to be a fold of intestine prolapsing a little to the left of the symphysis pubis. The situation was now sufficiently terrible. A careful examination, however, revealed the fact that the instrument was inside the uterus, which, with the anterior abdominal wall, was thin, and that the supposed fold of intestine was really the prolapsed cord. The handles of the cephalotribe were screwed together, but the instrument was not used as a tractor.

The cephalotribe was removed, but delivery could not be effected by either crotchet or cranioclast. For another hour, from twelve to one o'clock in the morning, we patiently worked away with Meigs's embryulcia forceps, pulling away little pieces of bone.

So slowly did the work go on, so rapidly did the patient's strength fail, that it seemed as if she must die undelivered. About half-past one o'clock, upon making a strong effort with the crotchet, the head was made to engage at the superior strait. We then succeeded in breaking away a few remaining portions of the frontal bone, when the chin was brought downward in the axis of the superior strait, and the head was seized with the cranioclast. With a severe effort it was dragged into the world, to the great relief of all present. The shoulders and pelvis were each pulled through the superior strait of the mother with considerable difficulty. The uterus contracted well; the placenta was removed in fifteen minutes, fortunately without any hemorrhage.

The woman had entered the eighth month of her

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pregnancy. The cranium was totally destroyed, the base only being left. The tissues of the face were much compressed, the superior maxillary arch having been decomposed, and the eyes forced from their sockets by the cranioclast.

The woman was put to bed, stimulants given freely, with little hope of her recovery. For several days she was desperately ill with peritonitis, but she finally recovered. This was due in a great measure to the unremitting attention of Dr. Jameson, the resident accoucheur. A month later, the patient left the hospital in perfect health, and she assured me that she "did not mind having a baby, that it did not hurt her any."

No better example could have been selected to illustrate the difficulties of craniotomy. Before the induction of premature labor, the propriety of resorting to Cæsarean section was gravely discussed. Two facts had to be considered in deciding the question. Craniotomy can hardly be called a conservative obstetrical operation, since it necessarily sacrifices the life of the child, while the dangers to the mother are by no means trivial. In this instance, however, Dr. Girvin had proved that a mutilated child could be brought through the pelvis. The second operation could be performed under more favorable circumstances, since gestation was not completed. But the event proved this to be no small task. The memory of the six weary hours which were spent at that girl's bedside will not soon be effaced, and it will be a long time before I cease to remember the keen regret which I felt that we had not considered more fully the propriety of resorting to the Cæsarean operation

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when we saw the symptoms of alarming prostration come on.

The statistics of this operation, so far as they are furnished us, go to show that the maternal mortality is high. Churchill* puts it down at one in five and a half. This statement is reiterated by Tyler Smith,† Hodge,‡ and others. If we examine cases as they are collected, this may appear to be the real mortality; and if so, we have a record which is indeed sad enough when compared with the loss of life in normal labor, which is about one in every 120 women.§ But it is to be remembered that the statistics of embryotomy are very fallacious. Drs. Hicks and Phillips‖ have reanalyzed those from which the conclusions of Churchill, Smith, and probably those of others were drawn, and have shown that their deductions are incorrect. No care whatever has been taken to separate the operation as a cause of death from the disease which demanded the interference; and they very justly argue that if the obstetric surgeon was forced to open the head to hasten delivery in a case of rupture of the uterus, and the woman died, she perished not from the operation, but in spite of it. It is very certain, therefore, that we must not compare the actual results of this mode of interference with the usually accepted statements.

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* System of Midwifery. 8vo. Phila., 1862. P. 372.

† "The Abolition of Craniotomy from Obstetric Practice, etc." Trans. Obstet. Soc. of London. Vol. i. p. 21.

‡ Principles and Practice of Obstetrics. 4to. Phila., 1866. P. 271.

§ Dr. J. M. Duncan. Mortality of Childbed and Maternity Hospitals. 8vo. New-York, 1871. P. 24.

‖ Trans. Obstet. Soc. of London. Vol. xiii. p. 55.

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The mortality from craniotomy varies greatly with the degree of deformity of the pelvis. In cases where the contraction is moderate, when delivery can be effected by simply evacuating the brain and extracting, the operation is one of the most simple and easily performed in obstetric surgery. Indeed, it is so simple that the difficulty is, not to operate, but to avoid operating. This is by no means to be compared with such cases as the one which has been put upon record in this paper, either in the difficulty in its performance, or the dangers to the mother. The former sinks into utter insignificance before the latter; and we do not fear contradiction when we say that, so far as the operator is concerned, Cæsarean section is much more easily done than craniotomy, when the antero-posterior diameter of the superior strait is two inches or below it. The mortality from craniotomy in moderately contracted pelves is not to be compared with that in cases in which the conjugate diameter is below two and a half inches. Until these distinctions are made, until other causes of death as the accidents of labor are eliminated, and until we cease to include these terribly grave embryulcia operations, with those less difficult ones which even the inexperienced can perform without trouble, we cannot make a comparison between the dangers of embryotomy and the Cæsarean operation.

During the past few years, the whole attention of obstetricians has been given to the perfection of means to avoid the latter operation, and to improving that of embyrotomy. The invention of the cephalotribe is certainly a most important advance in obstetric surgery, but it may be gravely questioned whether the advan-

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tages of the instrument have not been much overrated. Hemming has pointed out the fact that out of two hundred women upon whom cephalotripsy had been performed,* 39 died—a mortality of 19½ per cent. These cases seem to have been unselected. Jones† states that in the Hospital of the Clinique, at Paris, during three years—1857, 1858, and 1859—24 women were operated upon, 7 of whom died—a mortality of over 25 per cent. In eight of these patients, the conjugate diameter was below 2½ inches, and five of the fatal cases were among these women, showing most conclusively that in pelves with a conjugate less than that mentioned, the operation is very serious indeed—ay, so serious that the prognosis is almost too grave to contemplate. It is, indeed, a poor prospect of recovery which our art has to offer the mother when the chances are evenly balanced against her.

This fact may well lead us to consider whether craniotomy and its modification, cephalotripsy, is the best method of delivery in pelves with a conjugate diameter of two inches or less. The tendency in recent times has been to improve the cephalotribe to such an extent as to abolish the Cæsarean section from the operations of the obstetric surgeon. This important improvement in our instrumental appliances, in conjunction with the induction of premature labor, has given new facilities for dealing with these cases, and will enable obstetric surgeons to avoid the terrible resort of Cæsarean section in many instances. But there is a space through which

* Cazeaux's Treatise on Midwifery. 8vo. Phila., 1869. P. 1054.

† The Management of Labor in Contracted Pelvis. 8vo. London, 1865.

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even a mutilated fœtus will not pass. The celebrated case of Elizabeth Sherwood* has proved that this is very small. Much more important is it to determine the space through which a dead child can be drawn with comparative safety to the mother, for the exceptional and desperate cases upon record are exceptions to, rather than examples of the rule.

We are willing to grant what we believe to be perfectly true, that no obstetric surgeon should resort to Cæsarean section rather than craniotomy or cephalotripsy, when he has more than two inches in the conjugate and three in the transverse diameter of the superior strait. Hodge says:† "If, however, the contraction of the short diameter of the pelvis be two inches or under, then, as we have already mentioned, the Cæsarean operation is to be performed, as affording a better prospect for the mother." Yet it must be remembered that this eminent man, whose opinion is entitled to the more respect because it was deliberately expressed as the conclusion derived from an experience of forty years, was fully convinced of the virtues of the cephalotribe, and himself modified the instrument in several important particulars. Even Cazeaux—than whom none, more eloquently mourns the slender hopes we can afford the mother under the circumstances—says‡ that we should prefer Cæsarean section to craniotomy when the conjugate is 2⅛ inches and the child is alive. Greenhalgh,§ in an able article

* Osborne. Practice of Midwifery. 8vo. London, 1795

† Princ. and Pract. of Obstetrics. 4to. Philadelphia, 1866. P. 276

‡ Theoret. and Pract. Midwifery. 8vo. Philadelphia, 1869.

§ Trans. Obstet. Soc. London. Vol. vii. p. 285.

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upon the comparative merits of the Cæsarean section and craniotomy, expresses the following opinion: "I feel confident that the most sceptical must admit that the mortality to the mother is as great, if not greater, from craniotomy, in *extreme* distortion of the pelvis, as in the Cæsarean section." This opinion is certainly supported by this writer's own experience; for of six women with pelves the conjugate diameter of which did not exceed two inches and a half, five died between two, four, and seven days after delivery.* In consequence of this sad experience, he boldly says, "Nothing would induce me again, even under the most favorable circumstances, to attempt delivery by the crotchet, when the conjugate (true) diameter of the brim does not fully measure two inches exclusive of the soft parts." It is not our purpose to fill this essay with quotations from various authorities, or else the citation of opinions confirming those already quoted could be indefinitely prolonged; but based, as they are, upon imperfect data and poorly analyzed statistics, they add but little additional force to the statements of Hodge, Cazeaux, and Greenhalgh. We cannot, however, forget the important declaration of Burns, "It is one thing to extract, and another to extract safely in extreme deformity."

On the other hand, it must not be forgotten that the advocates of craniotomy and cephalotripsy—we include them both under one head—claim that delivery can be effected, in extreme deformity, by that method more safely than by Cæsarean section. Pajot, of Paris, con-

* Trans. Obstet. Soc. London. Vol. vii. p. 284.

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tends for the cephalotribe in a conjugate diameter of one inch and a quarter, and Barnes believes that with an inch and a half "the risk to the mother is inconsiderable compared with that attending the Cæsarean section."*

Braxton Hicks, who has probably produced the best cephalotribe now in the hands of the profession, has delivered through an inch and three quarters, and evidently believes that the range of utility of the instrument is considerably below this.

If we attempt to harmonize these diverse opinions, several very important facts must be taken into consideration. Although not the country in which cephalotripsy was revived—for this honor belongs to France and to Baudelocque—it is a noticeable fact that the strongest advocates of the instruments and the bitterest opponents of Cæsarean section are the English accoucheurs, who have resorted to the latter operation the least frequently and under the most desperate circumstances. It must not be forgotten that much of the statistical information which we possess of the mortality of both of these operations is utterly unreliable. Errors in regard to craniotomy are particularly glaring, as Hicks and Phillips have shown. It is entirely out of place to include all embryulcia operations under one head—as we said before, to compare the operation in a conjugate of 1.50 or 2.00 with that in 3, or 3.50—the one a procedure which is terrible in its details, the other a comparatively trivial process. It would be just as reasonable for surgeons to

* Obstetrical Operations. 8vo. New-York, 1870. P. 268.

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include all amputations of the lower extremity under one head. This is manifestly erroneous, for the mortality following amputation above the knee exceeds that of the operation performed below that joint; while the sad records of coxo-femoral disarticulations show that this is but a poor triumph for our surgical brethren. As we approach the centre of the body, in operations on the extremities, the mortality increases. As the conjugate diameter of the pelvis diminishes, so does the operation of craniotomy become more difficult and dangerous.

There is another reason why it is not proper to include all craniotomy operations in one category. In the recorded cases, perforation has been resorted to at very different periods in the course of the labor—sometimes at its commencement, when the woman was strong and cheerful; sometimes at the end, when she was exhausted and weak, and when the operation was an almost forlorn hope. These two classes of cases are constantly included under one head, and constantly compared with one another. It is as unreasonable as for a surgeon to estimate the mortality of amputations of the lower extremities by noting the number of deaths which follow the removal of the part in neglected cases, in which the proper time for operating has been allowed to pass, and the patient is exhausted and close to the narrow line which separates time and eternity. It is no use to argue that these cases are not parallel. As the skilful surgeon will anticipate the dangers of a case, and operate before his patient is exhausted by hemorrhages or prolonged discharges, so will the good obstetrician foresee the evil that is afar off, and in a vast majority of instances be enabled to perform em-

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bryotomy before his patient has been too much prostrated by ineffectual efforts to deliver herself.

Exactly the same remarks apply most forcibly to Cæsarean section. This operation is opposed by most English surgeons and accoucheurs, and it is indeed a dark record which they present to the professional world. Ramsbotham says,* that "out of at least fifty operations performed in the British Isles, there were only five instances of recovery, a mortality of 90 per cent." This statement nearly agrees with that of Dr. Playfair,† made in 1865, that only 11 per cent of the patients survived the operation in Great Britain. But the most reliable and important British statistics of this operation are those contained in the elaborate papers‡ of Dr. Radford, of Manchester. He has collected 98 cases, of which 82 or 83.67 per cent died, and 16 or 16.33 per cent recovered. This is truly but a poor record for British obstetric surgery, and removes any surprise which we may have felt at the attempts of their accoucheurs to improve the cephalotribe. But it is somewhat startling to learn that the operation has been much less successful in that country than it has on the Continent. M. Dufiellay§ has shown that many more may be saved, and that if the Cæsarean operation be performed early and before the woman has become exhausted, only 19 per cent die, and 81 per cent recover. This conclusion is based upon an analysis of all the cases which occurred between the

* System of Obstetrics. Philadelphia, 1865. P. 309.

† Trans. Obstet. Soc. Vol. vii. p. 288.

‡ Observations on the Cæsarean Section. 8vo. Manchester, 1865; and, Further Observations on the Cæsarean Section. 8vo. Manchester, 1868.

§ Archives Générales de Méd. 1861.

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years 1845 and 1861. Dr. Harris* criticises his statements because these were not all cases of gastro-hysterotomy, as that writer calls the Cæsarean operation, but were some of them instances of abdominal section for the removal of a fœtus which had escaped into that cavity through a ruptured uterus. It is true that the uterus is not incised in these instances; but we cannot think that this fact vitiates the conclusions of M. Dufiellay, since this would probably be more unfavorable than the Cæsarean operation when performed at a proper time, and before the woman was exhausted. This would appear to be true, for the destruction of the continuity of the uterine tissues by rupture would probably be less favorable than by the knife, while this accident would be likely to occur in women who had been in labor for a long time, and who were, therefore, exhausted by its pains and anxieties. Another reason why this view appears to be correct is, that in rupture the fœtus and some blood are extruded into the abdominal cavity, one of which is entirely, and the other in a great measure avoided in gastro-hysterotomy. In cases of rupture, of the uterus requiring abdominal section, we would expect the mortality to be greater than after the Cæsarean operation when performed early and at a selected time, for the reason that the shock in the former is much greater than in the latter. In the former there are two wounds—the first occurring under the worst possible circumstances, and the second made by the surgeon as the *dernier* resort, to rescue his hopeless patient from the very jaws of death. In

* Amer. Jour. Obstet., Nov. 1871. P. 427.

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view of these facts, it is therefore improbable that the association of these two classes of cases has made the mortality from gastro-hysterotomy appear more favorable than it really is. If these results appear doubtful, however, let us take the less favorable experience of operators in the United States as a guide. Dr. Harris, in his elaborate memoir upon this subject, writes:* "If we calculate the risks of gastro-hysterotomy in this country, from cases operated on in cities and large towns, or by their surgeons in their immediate vicinity—giving them all the advantages that skill and service can command—we find that 60 per cent of the women recovered." Dr. Harris, in his second paper † on Cæsarean section in this country, publishes a table of 17 cases in which the operation was performed during or at the close of the first day of labor. Among these the mortality was less, $70\frac{10}{13}$ per cent of the women recovering. This, it may be assumed, is nearer the truth than the other result, and is about 10 per cent higher than the estimated death-rate of M. Dufiellay. This being the case, the operation is deprived of many of its horrors, while the eloquent words of some of the advocates of cephalotripsy become but "sounding brass and tinkling cymbal." It cannot be denied that Dr. Barnes attempts to throw doubt upon the inferences drawn from statistics, and particularly alludes to those of M. Pihan-Dufiellay, and asks,‡ "What assurance have we that an undue proportion of successful cases are not recorded, unsuc-

* Amer. Jour. of Obstetrics, November, 1871, p. 436.

† Amer. Jour. Obstetrics, Feb. 1872, p. 662.

‡ Obstetric Operations. 8vo. New-York, 1870. P. 279.

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cessful ones remaining in the dark?" This, however, is little less than a tacit acknowledgment of the weakness of his position, and we now ask him how he will reply to the plain statements, and bare, bold facts recorded in Dr. Harris's papers, since he has spent months and even years in their collection, and since he expressly says,* "My experience has taught me that, in this country at least, the publication or withholding of cases has been very little influenced by favorable or unfavorable results, so far as the operation in question is concerned." He then states, "I have had more trouble in searching and obtaining abstracts of favorable cases than their opposites." In addition, we would ask the advocates of cephalotripsy what proof they have to furnish that records of unfavorable cases of delivery with that instrument are not hidden in mouldy note-books? The suggestion comes with as good grace from one side as the other. Barnes says,† "Obviously we cannot recognize fatal cases of craniotomy in extreme deformity, say of a conjugate diameter reduced to 2″ or 1.75″, unless the operation was begun under selected circumstances—that is, before exhaustion had set in—and conducted with due care and after the most approved methods." Obviously the same is true of the Cæsarean operation, and it is the very principle for which we have been contending through all these pages. It may be as fairly applied upon one side as the other.

The time has not long passed since wounds of the peritoneum were looked upon with the utmost dread

* Loc. cit., p. 422.

† Obstetric Operations. London, 1871. P. 314.

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by surgeons, but now they are made every day; and it is interesting to note a fact to which Dr. Playfair* has drawn attention, that the results of M. Pihan-Dufiellay's investigations give about the same mortality from Cæsarean section as from ovariotomy. In the American cases, tabulated by Dr. Harris, and in which all but cases of true gastro-hysterotomy were excluded, the death-rate is higher; but it is a noticeable fact that in Dr. Harris's second table, the estimated mortality really due to the operation is about 29 per cent, or about 4 per cent higher than that of ovariotomy. It may be urged that we should not compare these two operations, for in one instance we have the woman in the puerperal, and the other in the non-puerperal condition. This position is hardly correct, and a comparison of the two conditions will probably show that the puerperal is an equally favorable one for bearing an operation, because, though close to the border-land which divides health from disease, it is purely physiological in its character. On the other hand, the operation of ovariotomy is rendered necessary by a purely morbid process, and it is too often performed as the last resort. It may be urged that in gastro-hysterotomy two incisions are made—one through the abdominal wall, the other through an important internal organ—the uterus, and that therefore the operation will be found more dangerous than ovariotomy. But it is not to be forgotten that in the latter the pedicle is severed, a wound also internal in its situation, and that, in addition to this, extensive adhesions often have to be

* Obstet. Soc. Trans. Vol. vii. p. 288.

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broken up, thus adding much to the dangers of the procedure. Yet with all this, 75 per cent of the women recover—certainly one of the proudest triumphs of the art and science of surgery. With this achievement before us, and the recollection that when first performed ovariotomy was a very fatal operation, we have every reason to believe that, with proper care, the Cæsarean section will be just as successful, and that from 75 to 80 per cent of the women operated on will recover.

In order to appreciate truly the comparative merits of the cephalotribe and Cæsarean section, it will be necessary to study the dangers of craniotomy and the mechanism of the action of the cephalotribe. Barnes* says that of the former there are five.

1. The perforator may strike the promontory of the sacrum.

2. Spiculæ of bones may lacerate the soft parts of the mother.

3. The crotchet may slip and lacerate the mother.

4. The operation may be deferred too long.

5. Long-continued pressure may cause mortification and sloughing of the mother's soft parts.

Of these dangers three at least may be excluded, for we are now supposing that the patient has every opportunity that skill and attention can give her; and though the error may be easily committed, it is not to be supposed that an experienced accoucheur will thrust his perforator into the promontory of the sacrum for the fœtal head. Such a man would also so carefully guard his crotchet that his own hand would be lacerated rather

* Obstet. Operations. 8vo. London, 1871.

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than the mother's tissues, if it slipped. We are supposing, too, that the operation would not be deferred too long, and that the woman would not have become exhausted before an attempt was made to deliver.

But spiculæ of bone may wound the mother's soft parts. This is particularly liable to occur in just those labors which we are considering, in which there is extreme pelvic deformity. It is alleged that this can be prevented by the cephalotribe, but it is very doubtful whether this can be more effectually prevented by that instrument than by the fingers of the operator when they are properly used. Theoretically, it would appear as if the cephalotribe would push the bones through the scalp when forcible compression is used; but Professor Hodge has especially investigated* this matter, and proved that the opinion has no foundation in fact.

The writer conceives that a much more important point for consideration is the effect of pressure upon the soft parts of the mother. Every experienced accoucheur knows that the puerperal woman will bear an incredible amount of pressure upon the sensitive and delicate tissues of the genital passage during labor, and that the recovery from this is often surprisingly perfect. He is as thoroughly aware that there is a limit beyond which endurance ceases, when the effects of it, if they do not involve her life, may completely destroy her comfort and happiness.

In those cases of extreme pelvic deformity in which the operator is taken at a disadvantage, the dangers of

* System of Obstetrics. 4to. Phila. 1844. P. 277.

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sloughing of the cervix uteri, the vagina, and bladder are increased just in proportion to the diminution of the pelvic passages, and in proportion to the delay in delivery. But if delivery is to be effected by the crotchet, the embryulcia forceps, and the cranioclast, it is not difficult to see that these dangers are greatly increased, for the diminution in the size of the fœtal head is effected by dragging that structure downward against the mother's soft parts, supported by the bony pelvis, and making a fulcrum of these to enable the obstetric surgeon to twist the bones off.

Will the cephalotribe remedy this difficulty? In answering this question, it must be remembered that in the ovate and reniform pelvis, which is the variety of deformity in which we are most frequently called upon to deliver, in extreme cases, the blades of the instrument have to be passed at the sides of the pelvis, or in the transverse diameter. They consequently diminish the head in just that direction in which there is the most room, while through compensation its size is increased in the opposite direction, or that in which there is the least room and where there is the most danger from pressure. Hence, we are told to turn the instrument about in the cavity of the pelvis and to crush the head in the other direction. Pajot even performs a sort of lithotrity operation upon the fœtal cranium,* crushing from two to four times, at intervals of as many hours, and then extracting. Such suggestions may be very well with an antero-posterior diameter of over two inches and a half, but in our own case such a proceeding was impossible.

* Arch. Générales de Méd., May, 1863.

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The blades of the cephalotribe could only be put in one way, and even then not until a considerable part of the fœtal skull had been broken off and removed by Meigs's embryulcia forceps. After the introduction of the first blade, there was not sufficient room on the right side of the pelvis to allow its fellow to pass between the head and the brim, and hence it was not until a considerable part of the difficulty had been overcome that the instrument could be utilized.

In cases of this kind, the question to be solved is the delivery of the base of the skull through the contracted brim. In the delivery of his famous patient, Elizabeth Sherwood, Osborne* got the first glimpse of the principle by which this was to be effected, though it remained for his successors to fairly and fully elucidate it. Can you be certain that the cephalotribe has crushed and destroyed the base? Von Weber,† in experimenting on the heads of dead children, found that while the bones of the base may break, fractures are less common than simple bending of the bones inward, or turning upon themselves. Braxton Hicks makes the same statement,‡ and in a subsequent paper adds § that "the reduction of the base . . . is a matter of great difficulty, and requires great power in the instrument." This consideration led Von Weber to conclude, that the most important action of the cephalotribe is that of a powerful tractor. Barnes‖ says that it may be made to partly crush the base, and evidently takes

* Practice of Midwifery. 8vo. London, 1795.

† Quoted by Lusk, Med. and Surg. Reporter, June 8th, 1867.

‡ Trans. Obstet. Soc. London, 1870. P. 3.

§ Trans. Obstet. Soc. London. Vol. xi. p. 47.

‖ Obstet. Operations. 8vo. London, 1871. P. 301.

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what is the correct view of the powers of the cephalotribe—that it is useful rather to break up the perforated cranium than to diminish the size of the base, while its use as a tractor is a secondary consideration. In 1867, Braxton Hicks said plainly,* the instrument "is not a tractor; and therefore, should pains be absent, we shall generally have to draw down the head by some other means." The same authority had previously insisted† upon the importance of bringing down the base edgewise, with the chin foremost and in front, in delivery through extremely contracted brims. Three years later,‡ and again in 1870,§ and after he had modified the cephalotribe, he reasserted this doctrine, distinctly stating that the instrument is intended to crush the cranium, so that the base can be brought through edgewise. Hicks‖ plainly asserts that it is intended to compete with the crotchet and craniotomy forceps, and not with Cæsarean section. In this way, and for this purpose, the instrument becomes a very valuable one, and in cases of moderate deformity will enable the obstetrician to effect delivery within a short time; for in these cases the vault has to be crushed, when, by turning the head of the child within the cephalotribe so as to adapt its new dimensions to the pelvic brim, and using the instrument as a tractor, the fœtus will easily come through. But the matter is very different in narrow pelves below two inches; and, so far as my own case is of value, it has gone to show me

* Brit. Med. Jour., Oct. 19th, 1867.

† Trans. Obstet. Soc. London, 1864. Vol. vi. p. 263.

‡ Brit. Med. Jour., Oct. 19th, 1867.

§ Trans. Obstet. Soc. London, 1870. P. 3.

‖ Brit. Med. Jour. Oct. 19th, 1867, and Trans. Obstet. Soc. 1870, p. 3.

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that the cephalotribe will not supplant the cranioclast. In this woman, after the vault of the cranium was broken away and the face turned downward, the crotchet was still ineffectual. At this juncture one blade of the cranioclast was applied beneath the lower jaw, and the other thrust up into the concave surface of the base of the skull, after which strong compression was made and the whole face crushed in the instrument, decomposing the supra-maxillary arch and forcing the eyes from the orbits. This, I conceive, may be an important application of the instrument when the face has been brought down in narrow pelves. If this has been effected, the cranioclast can nearly always be applied in this way. The concavity of the base of the skull secures a position for one blade of the instrument, where it can directly harm none of the mother's tissues, while if its fellow cannot be thrust between the lower jaw and the pelvic wall, it can be passed into the child's mouth. In this way, the vault of the cranium being removed, the vertical diameter of the face, which is ordinarily an inch and a half, can be reduced to an inch or even less. Certainly no accoucheur can desire more than this; for if it were necessary to reduce the fœtal head still further, the pelvis would be so small that he could not operate through it. As a tractor under these circumstances, nothing could be more satisfactory than the cranioclast, and its place cannot be taken by the cephalotribe either for safety or efficiency.

The great virtue of the latter instrument is, that it enables us to get rid of the vault of the cranium quickly.

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We have been treating delivery, thus far, as a mere mechanical problem. Such it is, and the accoucheur has to determine how he can bring a body of a given size through an unyielding curved canal with definite diameters; but it is totally unlike the problem which Hull and Osborne tried to solve by dragging dead children through orifices having the shape of contracted pelves, and made in unyielding boards. In the human female, it is never to be forgotten, that to this physical there is added a vital element, and that the accoucheur has to consider how much pressure the delicate and sensitive tissues in the pelvis and lining the genital passages will bear. Barnes says* most forcibly, that were this problem given an engineer to solve, he would soon devise means to bring a body the size and shape of the fœtal head through a chink from an inch and a quarter to an inch and a half wide. This solution had been furnished and acted upon before Barnes published a single line of his book—furnished by the accoucheur himself, it is to be feared, to the serious detriment of his patient; for this is not a question in engineering, but one which involves human life and the protection of important and delicate organs and tissues. Hence the question has to be solved, not in the laboratory or mechanic's workshop, but at the bedside of suffering woman, when she is performing her highest and most delicate function.

In 1829, on the sixth day of June, Baudelocque the nephew asserted before the *Institut Royal de France*, that, during the preceding sixteen and a half years, one half of the mothers delivered by craniotomy in the Maternité at Paris had died. Then and there, to avoid

* Obstet. Operations. London, 1871.

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this fearful loss of human life, he proposed to revive the use of the cephalotribe of Assalini, and furnished a modification of it. That this instrument has received the attention which it merited, is proved by the fact that at the exhibition of the London Obstetrical Society, held in 1866, no less than seventeen different forms of the instrument were exhibited, while Hodge's,* and probably some others, were not shown. At the bedside it has been used in many a trying moment, and while English authorities laud it highly, our previous citations show that American and Continental writers assign it a more limited application.

Among the most recent observations which give us actual information of the clinical uses of the cephalotribe, are those of Dr. Karl Rokitansky.† These are peculiarly valuable, because this gentleman is the assistant of Professor Braun; and, besides having unusual opportunities for observation, has had the advantage of the counsel and experience of that eminent obstetrician, and may be fairly assumed to have had predilections in favor of the instrument. Of 103 cases of craniotomy coming under the observation of Rokitansky, 41, or about 40 per cent, terminated fatally. Speaking of the comparative merits of the cranioclast and the cephalotribe, he says, "In Professor Braun's clinic a much greater number of unfavorable cases had been treated by the cranioclast than by the cephalotribe, and yet the results of the

* Kidd. Dublin Quart. Journ. Med. Sci., Feb. 22, 1867, p. 4; and Catalogue of Instruments, &c. Pub. by London Obstet. Soc. 1867.

† Wiener Medizinische Presse. 8–19, 1870; and Ranking's Abstract, Jan. 1872. P. 225.

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former instrument were in every respect superior. . . . . With regard to the cranioclast, which, in truth, is nothing more than an extraction instrument, it may be asserted that its application, which can be made in every diameter of the pelvis, is never attended with that severe pain which is so often caused by the introduction of the cephalotribe." Of the nine cases of labor which Jones* observed in Paris, and in which the conjugate diameter was two and a half inches or less, eight were delivered by decomposing the head, and one by Cæsarean section. Of the eight women delivered by perforation and cephalotripsy six died—a mortality of sixty-six per cent. Dr. Jones adds: "If we consider that the total mortality of mothers and children is fourteen out of eighteen, we are led to deplore the impotency of obstetrical art in cases of this description." These facts led this author to assert "that cephalotripsy, when performed in a very narrow pelvis, is, notwithstanding the sacrifice of the child, a very murderous operation for the mother."

Some of these cases forcibly illustrate the difficulties which may be met with in the use of the cephalotribe. In one instance,† where the conjugate diameter was two and a half inches, M. Dubois perforated, but could not bring the head down. This was at four P.M. At half past five, two fruitless efforts were made to grasp the head. The instrument was tried again at seven A.M. on the succeeding day, without effecting delivery, when version was performed, but the fœtus could not be extracted. After this time the woman was practically

* The Management of Labor in contracted Pelvis. 8vo. London, 1867. P. 35.
† Ibid. p. 53.

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abandoned; but finally M. Dubois' assistant withdrew the child, which weighed only five and a half pounds, about the middle of the afternoon, just as the poor woman expired. This, indeed, is a sad commentary upon the usefulness of the cephalotribe, especially when we remember that the operation was done at the Hospital La Clinique, in Paris; when we remember that the instrument was in the hands of M. Dubois; when the woman's pelvis, as proved after death, was two and a half inches in the conjugate; and when the additional fact is stated that the labor began at ten P.M. on the 15th, and the operation was commenced at four P.M. on the 16th.

In another case, the woman, with a conjugate of two and a quarter, came under M. Dubois' care at ten A.M., when he perforated. Some time afterward, he attempted to apply the cephalotribe, when he could not catch the head, Dr. Jones says, because, "placed completely above the brim, it rolled under the pressure of the forceps, and escaped from the teeth of the instrument." Other unsuccessful attempts were made, and the delivery was abandoned till the next morning at nine A.M., when the contractions of the uterus had forced the head downward into the brim, and labor was terminated with the instrument at that time. The poor woman perished at six the same evening. The testimony in regard to the working of the instrument in these cases is very important, and certainly but poorly supports its utility in a conjugate of two and a half inches or less. The fact that so skilful an operator as M. Dubois repeatedly failed in grasping the head—that in one case, with a

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conjugate of two and a half, he practically abandoned the woman after manipulations extending over seventeen hours, and that his unfortunate patient died some five hours after it, just as his assistant drew away the fœtus, needs no commentary from us.

In Mr. Dubois' hands a smaller diameter than two and a quarter seems to have been an unsuperable obstacle to delivery. In a case in which the conjugate measured only one and a half inches, he made four unsuccessful attempts to apply the cephalotribe, then abandoned her for several hours; made three attempts at delivery with the cephalotribe; failed signally, and the woman died undelivered a few hours afterward. The force of this fact will not be increased by any remarks. It teaches but too plainly its own dark, sad lesson. The autopsy showed the source of the difficulty. The vault of the cranium was broken away, but a great part of the base was found intact, and this was too large to pass the contracted brim. Certainly these cases do not speak well for the cephalotribe; but, on the contrary, carry with them most convincing proof that it is difficult to manage, and uncertain in its action. Yet these operations were done in the home of Baudelocque, the reviver of the instrument of Assilini. It must not be forgotten, however, that the French cephalotribe is much larger than either the English or the American instrument, and that, although M. Pajot says that delivery should be effected by it, and Cæsarean section excluded in women having a conjugate of one and a quarter or more, its application must be difficult, and its range of usefulness narrow, when compared with our own and the British cephalo-

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tribes. But even when we give this its full measure of importance, we must admit that we have no clinical evidence that the cephalotribe is less dangerous than Cæsarean section in pelves with a conjugate diameter of 2½ inches or less. The few successful cases reported by Barnes and Hicks, of Great Britain, are insufficient to afford conclusive evidence that this instrument is equal to the cranioclast; while the observations of Jones and Rokitansky are decidedly in opposition to such a conclusion, and those of the former indicate that at least M. Dubois would have done well to have brought the children into the world by gastro-hysterotomy rather than by cephalotripsy.

If we now turn to the recorded histories of craniotomy and cephalotripsy that are to be found scattered here and there in periodical medical literature, we will be forced to conclude that perforation and breaking up of the fœtus is not more successful than Cæsarean section in pelves with a conjugate 2½ inches or less. Much difficulty has been experienced in the collection of these cases. In the first place, the number upon record is not large; at least the number is not large which may be used for statistical purposes, on account of the want of accuracy in the records.

We have collected, from various sources, seventy cases, of which a tabular statement is appended. Of these, thirty-three, or 61.43 per cent, recovered, and twenty-seven, or 38.57 per cent, died. If we compare these results with those of Cæsarean section as performed in America, and tabulated by Dr. Harris, we find they are inferior for according to that authority, 70⅓ per cent of those

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operated on "during or at the close of the first day of labor" were saved, and $26\frac{3}{16}$ per cent lost—a recovery of 10 per cent in favor of Cæsarean section, when properly performed and before the woman is exhausted. The death-rate of craniotomy appears still more unfavorable when compared with that of the cases collected by M. Dufiellay, but it is much less than that which has followed the operation of gastro-hysterotomy in Great Britain, which, according to Radford, is 83.67 per cent. But we must protest against the last being accepted as the true mortality. Indeed, Radford, who is a warm supporter of the Cæsarean operation, does this himself.

Some may marvel that no more than seventy cases of craniotomy have been tabulated, and indeed the number seems exceedingly small. Great difficulty has been experienced in finding these. The number of Cæsarean operations upon record is large enough. It is probable that nearly ten times as many instances of this operation as of craniotomy in pelves with a conjugate of $2\frac{1}{2}$ inches or less are upon record! *

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* In order to collect reliable statistics upon this subject, the writer addressed a circular letter containing the following questions to many of the prominent practitioners throughout the United States. He would be thankful to receive the record of any case in which delivery was effected or attempted by craniotomy, and in which the pelvis was not larger than that mentioned.

1. Age?
2. Number of pregnancy?
3. Cause of pelvic deformity? { Mollities Ossium? / Rachitis?
4. The diameters of the pelvis?
5. The presentation and position?
6. Duration of labor?

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Some may be disposed to question the justice of including certain cases in this table, in which delivery was finally effected by the Cæsarean operation. None appeal more strongly than these for a careful consideration of the comparative merits of the two methods of delivery. In all of these, craniotomy was previously tried and failed. This occurred in at least six of the seventy cases tabulated, and as the histories of these, with possibly one exception, prove that every effort was made to terminate labor in this way, they may very properly be included in estimating the mortality of craniotomy One of these histories is peculiarly instructive, (case 18;) for Dr. Dyce bears the very important testimony that he attempted to deliver by bringing the face down, and failed.

It is to be hoped that the fact that in these pages this question has been considered purely as a scientific problem, and only as it relates to the mother, has not passed unnoticed. Until this moment the child has not been mentioned except in quotation. This is in accordance with the generally accepted doctrine that the mother's is the more valuable life. Questions in religion, morals, and political economy have not weighed with us in

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a. Before rupture of the membranes?
b. Before perforation?
c. After perforation?

7. Instruments employed?
   a. Was the cranioclast used?
   b. Was the cephalotribe used, and if so, whose?
8. What was the result of the case?
9. If fatal, what was the cause of death?
10. If not fatal, was the recovery perfect?
11. Remarks.

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these remarks; and therefore the case of Cæsareanists becomes much stronger. If we remember that in the seventy cases included in the appended table, only thirty-three out of one hundred and forty lives were saved, the truth becomes almost too horrible to contemplate.

In conclusion, if we accept the premises laid down as true, we are justified in drawing the following deductions:

1. If gestation has advanced to the full term and the conjugate diameter of the superior strait be two inches and a half, craniotomy affords the mother no better chance for recovery than Cæsarean section; and that if the diameter be two inches or less, exclusive of the soft parts, it is the duty of the accoucheur to perform gastro-hysterotomy rather than craniotomy.

2. The recorded histories of cephalotripsy in such cases afford us no evidence that it will compete with the Cæsarean section in safety, while French and German experience seems to show that cranioclasm is both more safe and more efficient.

3. English accoucheurs, who are the firmest supporters of cephalotripsy, have not yet recorded a sufficient number of facts to controvert this position.

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No. of Case, and Reporter.	Reference.	Result.	Dimensions of Brim.	Cause of Death.	Length of Labor.	Remarks.
1. Smellie	Cases and Observations in Midwifery. 8vo. London. 1766. Vol. iii. p. 13.	Recovered.	Conjugate, 2½.			Delivered with the crotchet, and much force was used.
2. Hamilton	Pract. Observations, p. 263.	Recovered.	Conjugate, + 1½.			It required so much exertion to effect delivery, that Dr. Hamilton had to be carried home on a sedan chair.
3. Osborne	Pract. of Midwifery, 8vo. London, 1795.	Recovered.	Conjugate, ¾; transverse, 4.		Had continued nearly 3 days before perforation, and lasted nearly 2 days afterward.	The case of Elizabeth Sherwood. Perforation was effected, the child was allowed to decompose, the whole vault of the cranium was removed, and the base brought through edgewise. The thorax and abdomen were both perforated to effect delivery.
4. Clarke	London Med. Jour. 1786, quoted by Osborne.	Recovered.	Conjugate, 1½.		Before perforation, 22 hours; after perforation, 16 hours.	After perforation, it was intended to leave her until the child putrefied.
5. Clarke	London Med. Jour. 1786, quoted by Osborne.	Recovered.	Conjugate, 1½.		At least 3 days before perforation; about 8 hours after perforation.	Was left after perforation until the uterus moulded the head.
6. Robert Lee	Clin. Midwifery. 2d ed. London, 1848. P. 85.	Died.	Conjugate, 1½. The tuberosities of the ischia			This is the celebrated case of Mrs. Jarvis, who, after giving birth to three children, suffered from mollities ossium. In 1830, she was delivered by Dr. Lee after great difficulty, but the size of pelvis is not mentioned. In 1832, she had another long labor, and

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			were only 3 or 4 lines asunder.			was delivered by the crotchet in the orbits. In 1833 and 1835, premature labor was induced. The dimensions of the pelvis are not mentioned until 1836, when they were obtained at her post-mortem; but as mollities ossium was the cause of the difficulty, as this is a progressive disease, as premature labor was induced at the 7th month, in Feb., 1835, when the fœtus was expelled without assistance, and as Dr. Lee attempted to induce labor at the end of the sixth month, in Jan., 1836, and as he failed in effecting it until the succeeding March, it is fair to conclude that the pelvis had progressively changed.
7. Robert Lee.....	Ibid., p. 89.	Recovered.	Conjugate, 2 in.			She was subsequently delivered by premature labor.
8. Robert Lee.....	Ibid., p. 46.	Recovered.	Not mentioned, but it was very narrow.			The operation lasted five hours, and the pelvis was so narrow that the child, which was at full term, could not be drawn through. The skull would not pass until the base was entirely destroyed.
9. Robert Lee.....	Ibid., p. 87.	Died.	Conjugate, 1¾; oblique, 1¼, (right;) oblique, 1½, (left.)	Suffering from mollities ossium. Long labor.		Labor was induced at 6½ months. The pains had continued for five or six days when the nates were found to present.
10. Cox.....	Provincial Med. and Surg. Jour., vol. 8, p. 382.	Died.		Labor.	From 30 to 40 hours.	Craniotomy was tried and failed. Forced to resort to Cæsarean section.
11. Keiller.....	Trans. Edinburgh Obstet. Soc., 1872, vol. ii. p. 46.	Recovered.	Conjugate, under 2 inches.			Delivered with the cephalotribe.
12.	Amer. Jour. Med. Science; ——; Hodge's Obstetrics. 4to. Phila. 1866. P. 285.	Recovered.	Conjugate, 2.			The celebrated case of Mrs. Reybold.
13.	Ibid.	Recovered.	Conjugate, 2.			The 2d labor of Mrs. Reybold, who was afterward safely delivered upon two occasions by the Cæsarean operation.

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No. of Case, and Reporter.	Reference.	Result.	Dimensions of Brim.	Cause of Death.	Length of Labor.	Remarks.
14. Murphy	Dublin Quart. Jour., Feb. 1859, p. 123, and Lancet, Apr. 3d, 1847.	Died.	Conjugate, 1¼; transverse, 4½.	Exhaustion. There was no lesion discovered at the post-mortem to account for death.	3 days.	There was great difficulty in effecting delivery. The operation was performed at Rickmansworth. Had the patient been in London, Prof. Murphy would have performed Cæsarean section.
15. Shekleton	Dublin Quart. Jour., Nov. 1850, p. 287.	Died.	Brim would only allow one finger to pass.	Ruptured uterus.		The pelvis was obstructed by a tumor. It was the woman's sixth labor.
16. Henry Oldham	Med. Chir. Trans., vol. 34, p. 89.	Died.	Conjugate, 2.	Labor.	84 hours.	Mother was rickety. Labor was induced at the 7th month. The cranium was entirely, and the base partly broken up, when the right hand and foot were found in the brim. They could not be brought down and the operation of Cæsarean section was performed.
17. Humphry	Asso. Med. Jour., vol. iv., 1856, p. 779.	Died.		Labor.		Craniotomy was tried and failed. She lived two hours after it.
18. Robert Dyce	Edinburgh Medical Jour., vol. vii. p. 895.	Died.	Conjugate, 2 in.	Labor.	4 to 5 days.	Craniotomy was performed. All the cranium and even a part of the base were broken down. Tried to bring the face down *and failed*. Forced to resort to Cæsarean section to effect delivery. Lived 48 hours afterward.
19. Ramsbotham	Med. Times and Gazette, July 5th, 1862, p. 6.	Recovered.	Conjugate, 2 in.			Delivery effected by destroying the vault of the cranium and bringing the face downward.
20. Ramsbotham	Ibid., Aug. 23d, 1862.	Recovered.	1¾ on the left side.			The obstruction was due to a pelvic tumor.
21. Ramsbotham	Ibid., Sept. 6th, 1862.	Recovered.	Conjugate, 2½.			Took only an hour to deliver.

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22. Pajot	Gaz. des Hôp., Jan. 1862.	Recovered.	Conjugate, 1¾ in.			
23. Johnson	Lancet, Nov. 1st, 1862.	Died.	Conjugate, 2¼.	Labor.		Craniotomy was tried and failed to deliver. Resorted to Cæsarean section.
24. Murphy	Dubl. Quarterly Jour., May, 1864.	Died.	Conjugate, 2¼.			Had bronchitis when admitted, but it was mild.
25. Murphy	Ibid., May, 1864.	Died.	Conjugate, 2 1-5.	Exhaustion.	Total, 72 hours; after perforation, 4 hours.	In this and the previous case Dr. Murphy resorted to craniotomy rather than Cæsarean section because the child was dead.
26. Makenzie	Trans. Obstet. Soc. London, vol. i. p. 267.	Died.	Conjugate, 2⅜; transverse, 5¼.	Fatigue and shock.		Craniotomy was commenced as soon as os was dilated. Delivered by craniotomy forceps. Cephalotribe was not used.
27. Hicks	Ibid., vol. vi. p. 292.	Recovered.	Conjugate, 2¼.			
28. Hicks	Ibid., p. 294.	Recovered.	Conjugate, 2½.			
29. Hicks	Ibid., p. 296.	Died.	Conjugate, 2½.	Exhaustion, and delay in operating.		Had been in labor 24 hours before Dr. Hicks saw her. Was delivered by perforating and bringing the face downward.
30. Hicks	Ibid., p. 296.	Recovered.	Conjugate, about 2in.			Pelvis was obstructed by a tumor.
31. Bryce	Edinburgh Medical Jour., Aug. 1864, p. 179.	Recovered.	Conjugate, 2½.		About 4 days.	Delivered with the cephalotribe.
32. Greenhalgh	Trans. Obstet. Soc., vol. vii. p. 281.	Recovered.	Conjugate, 2⅜.			
33. Greenhalgh	Ibid., p. 282.	Died.	Conjugate, 2⅜.	Rupture of uterus.		This was the same as the previous patient. Could not steady the head to perforate, and had to perform version. Dr. G. believed the rupture of the uterus was due to the ineffectual efforts to perforate.
34. Barnes	Ibid., vol. vii. p. 287.	Recovered.	Conjugate, 1½.			

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No. of Case, and Reporter.	Reference.	Result.	Dimensions of Brim.	Cause of Death.	Length of Labor.	Remarks.
35. Greenhalgh	Ibid., vol. vii. p. 229.	Died.	Conjugate, 1¾; transverse, 5.	Difficulty in operating. Rupture of uterus.		Failed to deliver the head by craniotomy. Had to do it by Cæsarean section.
36. Kidd	Dublin Quarterly Jour., Jan. 1867, p. 334.	Recovered.	Conjugate would admit two fingers.			She was 7½ months pregnant and the child was putrid, and the woman was in a deplorable condition. Although Dr. Kidd does not state that the conjugate was under 2.50, his quotation from on p. 336 also shows that it was.
37. F. Bird	Radford. Observations on Cæsarean Section. Manchester, 1868.	Died.	Conjugate, 1¼.			Craniotomy was tried, failed, and resorted to Cæsarean section.
38. A. Milne	Edinburgh Medical Jour., July, 1868.	Recovered.	Conjugate, 2½.		Before perforation, 24 hours; after it, 25 minutes.	Delivered by the cephalotribe.
39. W. H. Jones	Management of Labor in Contracted Pelvis. 8vo. London, '67. P. 57.	Recovered.	Conjugate, 2 in.		15 hours.	Breech presentation. Delivered by detruncation and cephalotripsy.
40. W. H. Jones	Ibid., p. 58.	Died.	Conjugate, 1½.	Labor. Died undelivered.		At full term. Had been four days in labor when admitted to hospital. M. Dubois perforated with difficulty at 9½ A.M., and tried four times to apply the cephalotribe and failed. At 4 P.M. applied it and tried three times without success in bringing down the head. At the autopsy a great portion of the base of the cranium was found intact.
41. W. H. Jones	Ibid. Table of Cases.	Recovered.	Conjugate, 2½.		106 hours.	Delivered by craniotomy and cephalotripsy.
42. W. H. Jones	Ibid. Table.	Recovered.	Conju. 5½.		20 hours.	Craniotomy and cephalotripsy.
43. W. H. Jones	Ibid. Table.	Recovered.	Conju. 2¾.		38 hours.	Craniotomy and cephalotripsy.

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44. W. H. Jones	Ibid. Table.	Died.	Conju. 2 in.		34 hours.	Breech presentation. Detruncation and cephalotripsy.
45. W. H. Jones	Ibid. Table	Died.	Conjugate, 1¾.	Exhaustion. Arthritis of pubis.	24 hours.	Delivered by cephalotripsy repeated with traction, after Pajot.
46. W. H. Jones	Ibid., p. 52.	Recovered.	Conjugate, 2½.		3 days, but pains not active for 2 days.	Pregnant 7½ months. Version by M. Dubois after many laborious attempts. Head delivered by the cephalotribe.
47. W. H. Jones	Ibid., p. 53.	Died.	Conjugate, 2½.	Exhaustion.	Total, 40 hours. Perforation at end of 18th hour.	Full term. Died just after delivery was effected. Cephalotribe applied at 18th hour, but could not be delivered. In two hours tried again, but could not grasp the head. This was at 5½ P.M. Left till 7 A.M. the next day, when M. Dubois again applied the cephalotribe in vain. Version performed. Cephalotribe applied to pelvis and unsuccessful attempts at traction. Traction upon feet recommended at this time, but the patient was practically abandoned.
48. W. H. Jones	Ibid., p. 56.	Died.	Conjugate, 2¼.		44 hours; about 23 after perforation.	Full term. Perforation at 10 A.M. by M. Dubois, and left to nature for some time, when an attempt was made to crush with the cephalotribe, but could not catch the head. 8 P.M. unsuccessful attempts repeated. The next morning at 9 A.M. the labor was terminated with the instrument. The extraction of the fœtus was attended with a discharge of fœtid gas and bloody fluid of such a nature that those present "were much affected by it."
49. Radford	Observations on Cæsarean Section. 8vo. Manchester, 1865. P. 48.	Died.	Conjugate, 2 1-12.	Could not effect delivery, and the vagina ruptured.		Cause of distortion, mollities ossium.
50. J. A. Byrne	Dublin Quart. Jour., May, 1868.	Recovered.	Conjugate, 2½.		Over 41 hours.	Delivered with the cephalotribe.
51. J. H. Davis	Parturition and its Difficulties. London, 1865. P. 292.	Recovered.	Conjugate, 1½.			Waters had escaped two days before she was seen by Dr. Davis.
52. J. A. Ransome	Trans. Obstetrical Soc., p. 158. Related by Dr. Radford.	Died.	Conjugate, 2¼; transverse, 3¼.	Undelivered. Ruptured uterus.	72 hours.	Craniotomy was tried, but delivery could not be effected by it.

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No. of Case and Reporter.	Reference.	Result.	Dimensions of Brim.	Cause of Death.	Length of Labor.	Remarks.
53. O. Von Franque.....	Scanzoni's Beiträge, 1869. N. Syd. Soc. Bien. Ret., 1869–70, p. 418.	Died.	Conjugate, 2¼; transverse, 4.6.	Diphtheritis of vagina and uterus.		Delivered by the cephalotribe. Child weighed 6 pounds, and was born after "protracted proceedings."
54. Barnes.....	Obstetric Operations. 8vo. London, 1871. Trans. Obstet. Soc., vol. xi. p. 191.	Recovered.	Conjugate, 1½.			Barnes states that he used the cephalotribe with perfect success. The mother was in St. Luke's workhouse.
55. Girvin.....	Register of Philadelphia Hospital.	Recovered.	Conjugate, 1½.			Delivered with Meigs's embryulcia forceps and the cranioclast at full term.
56. Parry.....		Recovered.	Conjugate, 1½.		Nearly 7 hours.	Same woman who was operated on by Dr. Girvin. Labor induced at 8 months.
57. J. G. Mitchell.....	Lancet, (Amer. ed.,) vol. ii., 1853, p. 360.	Recovered.	Conjugate, 2¼.			Her second pregnancy.
58. John Ramsbotham.....	Pract. Observ. on Midwifery. 8vo. Phila. 1822. P. 333.	Recovered.	Conjugate, 1½ to 1¾.		Before perforation, bet. 3 & 4 days; after perforation, 7 hrs.	
59. John Ramsbotham.....	Ibid., p. 331.	Recovered.	Conjugate, under 2½.			Labor induced at 8 months.
60. A. B. Granville.....	Rep. of the Practice of Midwifery at the Westminster Dispensary. 8vo. London, 1819. P. 98.	Recovered.	Conjugate, 1¾.		Before perforation, 2 days; after perforation, 7½ hours.	Measurement by Merriman.
61. A. B. Granville.....	Ibid., p. 103.	Recovered.	Conjugate, under 1⅝.			
62. Philip Harvey, Iowa....	Private communica-	Recovered.	Conjugate,			This woman has been delivered by craniotomy five

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	tion to writer.		about 2 inches.			times—twice in Germany, once in New-York, and twice by Dr. Harvey. He writes that her recovery has always been rapid and perfect.
63. Prof. W. H. Taylor, Cincinnati, O.....	Private communication to writer.	Recovered.	Conjugate, 2½.			Her fourth pregnancy. Craniotomy had been performed in two other labors.
64. Thomas M. Logan, Sacramento, Cal.....	Private communication to writer.	Recovered.	Conjugate, 1 inch.			This was the woman's 3d pregnancy. Cause of deformity was mollities ossium. Her first child was born alive. The second was delivered by embryotomy.
65. Prof. Fordyce Barker, New-York.....	Private communication to writer.	Died.	Pelvic cavity nearly filled with a bony tumor.		Was in labor 2 days under care of a midwife before seen by any physician.	The operation was completed with great difficulty. Lived two days after delivery.
66. Prof. Fordyce Barker, New-York.....	Private communication to writer.	Died.	Conjugate, less than 2 inches.		Duration of labor, 30 hours.	Died a few hours after delivery.
67. Prof. Fordyce Barker, New-York.....	Private communication to writer.	Died.	Cavity of pelvis filled with an osseous tumor. No diameter exceeded 1¾ in.		Perforation 9 hrs. after discharge of waters.	Dr. Barker desired to perform Cæsarean section in this case, at a consultation held before the commencement of labor, but craniotomy was performed.
68. Prof. Fordyce Barker, New-York.....	Private communication to writer.	Recovered.	Conjugate, less than 2 inches.			
69. Dr. R. P. Harris, Philadelphia, Pa	Private communication to writer.	Recovered.	Conjugate, 2⅓.		In labor 4 days before perforation.	Operation was performed by Dr. C. D. Meigs, at the Pennsylvania Hospital, in winter of 1843-4. The "Cæsarean operation was discussed and declined by Dr. Peace."
70. Drs. Thomas A. Downs and R. M. Girvin, Philadelphia.	Private communication to writer.	Recovered.	Conjugate, 2⅓.		Total, 17 hours.	

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

REPORTED BY JAMES V. INGHAM, M.D., SECRETARY.

STATED MEETING, SEPT. 5, 1872. DR. WILLIAM GOODELL, PRESIDENT, IN THE CHAIR.

UTERINE POLYPUS—CYSTIC TUMOR OF LABIUM.

DR. J. H. PACKARD exhibited a polypus of the uterus, which he had removed a few days previously. The patient had been under his care for some time for a leucorrhœa, and, after several days of unavailing treatment by astringent injections, he made a careful examination, and discovered the polypus. The woman had recently been confined, yet nothing had occurred during either gestation or labor to lead to a suspicion of its existence. It was easily removed with the wire écraseur of Dr. Braxton Hicks, and was little larger than an egg. He also exhibited a cystic tumor removed from the labium of a colored woman. It had existed for two years, and during that time had been mistaken for a hernia by another physician, who had twice apparently reduced it. The disappearance of the tumor was most probably due to a rupture of the walls of the cyst, and a diffusion of its contents into the surrounding tissues. The incision for its extraction was made on the outside of the labium, as being less liable to hemorrhage and to injury to the cicatrix during future labors. The removal was readily effected, and the hemorrhage was controlled by pressure and the persulphate of iron. He did not think that there should be any difficulty in diagnosing these cystic growths from hernia, especially as the tumor could be perfectly isolated.

DR. WILLIAM F. JENKS mentioned two cases of tumors caused by the closing of the ducts of the glands of Bartholine. He thought, however, that the specimen exhibited by Dr. Packard was very different in its pathology. He called the attention of the society to the fact that there were in the labia a row of glands without any excretory ducts, and he believed that these cystic tumors found their origin in these glands. He then referred to several cases mentioned by McClintock, and also to one noted by Pelletin, that was mistaken by many for hernia.

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POLYPUS COMPLICATING PREGNANCY.

Dr. H. Williams mentioned a case under his care, of a woman aged 32, in the third month of gestation, with a small polypus protruding from the cervix, causing a slight hemorrhage after any exertion, and if the exertion is prolonged the hemorrhage becomes excessive. He asked the Society for information concerning the advisability of removal.

Dr. J. H. Packard did not think that at present an operation was indicated.

Dr. William Goodell referred Dr. Williams to an article in the London *Lancet* for August, 1872, in which this subject was treated in detail. He, Dr. Goodell, would wait until after the fourth month of gestation, and then would certainly remove it. Some time ago he delivered a woman in whose uterus there was a large polypus. The labor was uncomplicated, but was followed by hemorrhage; this was, however, controlled by large doses of ergot until the eighth day after delivery, when the hemorrhage returned and the polypus was discovered. She left the hospital and returned home, but died after five weeks from pyæmia.

Dr. William F. Jenks reported a case of congenital craniotabes, occurring in the wards of the Philadelphia Hospital, death resulting from eclampsia on the fifth day.

The labor was unusually rapid, scarcely ten minutes being required, after dilatation of the os uteri, to complete delivery, although the woman was a primipara and the perineum was quite rigid. On examination, the parietal bones were found to be exceedingly thin, yielding like parchment under pressure, so that the head could be readily wire-drawn or moulded. The occiput was the seat of four membranous spots, situated near the lambdoidal suture. The child nursed well, and, although small, remained well until the fourth day after birth, when spasmodic movements of the limbs were first noticed; these culminated in eclamptic spasms, recurring at first every two hours, but finally becoming continuous and resulting in the death of the child eighteen hours after the first attack. The longitudinal and transverse sinuses of the brain were filled with dark clots, the membranes were congested; the cerebral substance was, however, in general pale and anæmic, but numerous rosy-tinted, softened patches of encephalitis were found, more especially in that portion of the brain situated along the sides of the lateral ventricles. Under the microscope, Gluge's exudation corpuscles were found to be numerous, and the capillary vessels were dilated and varicose. He also reported another case in which the membranous spots, three

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in number, were situated along the sagittal suture, the occipital bone being ossified to an exceptional degree; the child weighed 8¾ lbs., and after a tedious labor was delivered by the forceps. Death took place the second day after delivery, with partial convulsions affecting the right side of the face and body; the cerebral membranes were congested, but the brain on section appeared pale, and no evidences of local encephalitis could be found.

STATED MEETING, NOV. 7TH, 1872. DR. J. L. LUDLOW, VICE-PRESIDENT, IN THE CHAIR.

DR. A. H. SMITH exhibited a specimen of parametritis. The woman, aged 33, had been sent to him from Easton, and when he saw her on the 10th of June last, she was greatly emaciated, with a haggard, worn expression, the skin was yellow, her appetite was poor. She was suffering great pain in the right lumbar and ovarian region; there was no hemorrhage, no discharge from the vagina; had great difficulty in urinating, and was obstinately constipated. On making a vaginal examination, he found a solid mass forming a complete roof to the pelvis, of a firm, unyielding character; the os uteri was situated about in the centre of the tumor, was open, and was apparently free from disease.

She continued in this condition without much change, except at times suffering from severe paroxysms of pain in the right lumbar region, until the first of September, when all the symptoms became more severe; the pain became almost constant; urination became first extremely difficult, attended with great tenesmus, and at last impossible, necessitating the constant use of the catheter to draw off the highly ammoniacal urine; the constipation grew more obstinate, and was only relieved by large saline laxatives, producing a copious watery discharge. About the middle of September, she became almost maniacal, having frequent hysterical paroxysms; these increased in severity until they closely resembled attacks of mania a potû. She was always in a terrible fright; apprehended injury from her relatives, who were exceedingly kind to her, but whose presence she could not tolerate. This condition was soon followed by a stupor from which she never rallied, and two weeks ago she died.

From the commencement of the disease she had never suffered from uterine hemorrhage. The menstruation, although regular, was sometimes prolonged, but was never excessive. For ten days preceding her death, she had taken no solid food, and had had no evacuation from the bowels, having rejected both from the stomach and rectum all laxative medicine.

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Some years ago, she was under the care of Dr. Allen for tertiary syphilis, but from which she had apparently entirely recovered. At the post-mortem examination, the walls of the uterus were found to be indurated, the ureters were distended, and the connective tissue of the pelvis was generally infiltrated; the uterus was firmly adherent to the sacrum.

Dr. J. S. Parry moved that this specimen be referred to a special committee for microscopic examination, to report at the next meeting. Drs. Parry, Jenks, and A. H. Smith were then appointed for this committee.

Dr. R. G. Curtin read the following history of

A CASE OF OVARIOTOMY,

and presented a post-mortem specimen.

B. C——, æt. 44, a short, rather slender English woman, who had resided in Philadelphia for the last six years. She had always been rugged and healthy. She menstruated at thirteen, and had been regular ever since, except while bearing children. She had three grandchildren, her two daughters and herself having given birth to children at or before the age of twenty. She was married at eighteen, and had seven children and two miscarriages. One miscarriage occurred seven years ago, and one year later she gave birth to a child at term; the second miscarriage occurred about two and one half years before the operation. About eleven years ago, she first noticed an abdominal enlargement, and about the same time a tumor was discovered occupying a central position. The tumor grew slowly and steadily until her last miscarriage, (two and one half years ago,) at which time it was about half the size of a pregnant uterus at term. Subsequently it increased in size more rapidly. She menstruated regularly during the growth of the tumor, but somewhat more copiously than usual. Two years before the operation, the tumor was examined carefully by Drs. Curtin and Jenks, and the following conditions were found: The tumor was larger than a uterus at term, and pyriform in shape; its position was central. The wave on percussion traversed its whole extent. The superficial veins of the abdomen were somewhat enlarged. On digital examination, the vagina at the right side of the uterus was found to be pushed down. The sound passed two and one half inches. She was tapped seven times between the first of September, 1870, and the second of April, 1872, a period of nineteen months. About three and one half gallons were evacuated at each tapping.

On Monday, May 27th, 1872, the operation was performed with

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the assistance of Drs. D. Hayes Agnew, Mears, Jenks, and Allis. The incision was but one and a half inches in length. The contents of the cyst were evacuated by Dr. Mears's trochar, after which the tumor was easily drawn out through the small incision. There was found an adhesion to the omentum, about two inches in extent. The pedicle was long, narrow, compact, and entirely free from adhesions. This was secured by Dr. Atlee's clamp, and dressed in the usual way. On the first day, the patient did well, vomiting only occasionally; but on the second day this vomiting increased in frequency, the ejecta being *very offensive*, her skin became hot and dry, and her pulse went up to 118. On the third day, the vomiting still increased, and so did the fœtor of the dark, grumous ejecta. All the ordinary remedies by the mouth failed to arrest the vomiting, but at the end of the third day it was promptly checked by giving hypodermically a full dose of morphia, and by feeding and stimulating her by the rectum; nothing whatever was given by the mouth. Her menses appeared at the end of the third day, (a week in advance of the usual time.) Every thing went on nicely from this time until the end of the second week. The clamp came off on the sixth day. On the fourteenth day, she had a desire to go to stool, and, during the absence of the nurse, she got out of bed and used the chamber several times, straining each time violently. Three days after this, she said there was a soreness on the posterior part of the thigh, and on examination there was found a small tumefaction midway between the pelvis and knee. The pulse was not accelerated, nor were there any constitutional symptoms. She stated that she had injured her thigh in rising from the bed. The tumefaction grew larger, and a well-marked phlebitis ensued, followed by an infiltration of the subcutaneous connective tissue, resulting in the formation of a large abscess on the posterior part of the thigh. On the 24th day, the abscess was opened, and three ounces of laudable pus were evacuated. The next day a train of the gravest symptoms presented themselves, such as delirium, subsultus tendinum, involuntary stools, picking at the bed-clothes, tongue dry and brown, sordes on teeth, pulse 140. These alarming symptoms in about four days subsided under tonics, stimulants, and nourishment, so that at the end of the fourth week her pulse was 100, tongue moist and almost clean, skin cool and moist, appetite good, mind clear. She gained flesh and strength rapidly after this, and seemed in a fair way to recover. The weather becoming intensely hot, and the atmosphere of her room (which was small and directly under a tarred roof) being stifling and oppressive, she sank with exhaustion from the heat, dying at the

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end of the fifth week after the operation. Those with her stated that the temperature of the body increased for several hours after death.

Autopsy forty-eight hours after death. The weather was exceedingly hot. There was some post-mortem discoloration of the body. The *heart* and *liver* were healthy. The posterior parts of the *lungs* were congested, but otherwise healthy. The *abdominal cavity* was entirely free from evidences of inflammation, except where the pedicle and omentum were adherent to the edges of the incision. The union there was perfect. The pedicle long and free. The *intestines* were perfectly healthy. No change was discovered in Peyer's patches or the mesenteric glands. No evidence of pelvic inflammation was seen. The *uterus* was enlarged, and the mucous membrane congested. These conditions could be easily accounted for by the fact that it was about time for her menses. The left *ovary* was normal. The *blood* was fluid and of a purplish hue; when submitted to a microscopical examination, the white corpuscles appeared in excess—otherwise it was normal.

Dr. J. S. Parry exhibited for Dr. E. L. Duer,

A Specimen of Cancer of the Uterus.

The patient had been recently admitted into the wards of the Philadelphia Hospital, and died before any examination was made. On admission she was saturated with a strong, sweetish, urinous odor, and was in a condition of partial hebetude, giving rise to a suspicion of uræmic poisoning.

On making the autopsy, extensive disease was found involving and destroying almost all of the uterus. The walls of the bladder were greatly ulcerated, and an extensive vesico-vaginal fistula had been created. The rectum was also extensively diseased, but had not opened into the vagina. The ureters were distended, the pelves of the kidneys enlarged, and the body of the kidney was atrophied. Dr. Parry thought that the patient had died from uræmic poisoning, and believed that this illustrated a frequent mode of death in these cases.

Dr. C. H. Thomas referred to a somewhat similar case, which came under his notice about six years ago. This patient had been seen and treated by several of the leading physicians of this city, who had all concurred in the diagnosis of cauliflower cancer of the cervix uteri, and had given an unfavorable prognosis. The history was one of great suffering and of repeated profuse hemorrhages. When she came under Dr. Thomas's care, he refused to give a prognosis, more from sym-

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pathy with the feelings of the patient than from any doubt concerning it. He used glycerole of tannin applied on a pledget of cotton, and was greatly surprised after four weeks of treatment to see the improvement. The hemorrhages, which had been very great, entirely ceased. The almost complete occlusion of the bowel that had previously existed disappeared, and her general condition was quite good. The improvement continued, and a late examination did not reveal any traces of her former disease. The previous treatment by caustics had always caused frightful hemorrhages.

Dr. J. L. Ludlow doubted the correctness of the diagnosis, and mentioned a case in which a tumor of the cervix had been mistaken for cancer. The patient was treated with local applications of iodine, and recovered. He also mentioned another case, in which a so-called cancer had been cured by creosote and rose-water. He doubted the existence of cancer, unless diagnosticated by the microscope, and believed that cancer can not be cured in this way. As regards Dr. Parry's case, he thought it was well treated, but believed that the relief would prove only temporary. He called attention to the hysterical symptoms existing in the case narrated by Dr. A. H. Smith, in connection with adhesions to the sacrum, and stated that he had seen the same symptoms arising from pressure on the sacral nerves.

Dr. R. G. Curtin doubted the existence of cancer in Dr. Thomas's case, and mentioned a case in which several physicians had been puzzled to decide between the existence of a cancerous or specific disease, the latter finally proving to have been the trouble.

Dr. J. S. Parry doubted the power of glycerole of tannin to cure cancer, and mentioned a case of condylomata which clearly resembled a cauliflower growth.

Dr. J. L. Ludlow believed that tannin was very useful in arresting hemorrhages, as it often proved more efficacious than the persulphate of iron, and cited a case of cancer of the breast in illustration.

Dr. A. H. Smith believed that the true condition had been one of simple vegetations growing from the cervix, and stated that he had seen analogous cases, though not so extensive. He did not believe that cancer could be cured; it will return if removed.

Dr. J. G. Allen remembered the case cited by Dr. Thomas. She had been under his care for some time; when she left him, there was a protrusion from the cervix closely resembling a cauliflower growth. He also had his doubts about her freedom

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from disease now, and certainly believed that she would ultimately die from cancer of the uterus.

Dr. A. H. Smith reported the following

Accident occurring in the Induction of Premature Labor.

He was lately called to see a woman aged 32, who eight years ago had been delivered naturally of her first child. Up to the fourth month of this her second pregnancy, she had been apparently perfectly healthy. The urine then became albuminous, and despite the most active treatment the amount of albumen constantly increased. When he saw her on July 23d, she was in a pitiable condition; her face, hands, and lower extremities were extremely œdematous, with great mental hebetude, and the urine was almost solidified by heat. The day before, she had apparently collapsed, the pulse running up to 180, with very feeble and irregular respirations, and every symptom of uræmic poisoning. He believed that she was suffering from a slight heart-clot in addition to the albuminuria, and deemed it necessary to deliver her at once, she then being about 5½ months advanced in pregnancy. Dr. A. Stillé confirmed the diagnosis of heart-clot, and indorsed the proposed treatment. As her condition was too low for etherization, and the pain from slow dilatation of the cervix too great to be borne without it, it was deemed advisable to puncture the membranes and allow the waters to drain off slowly. The sound passed easily from 4–5 inches; the membranes were ruptured and the waters gradually drained away. The next day she seemed much better, the uterus was smaller, skin warmer, pulse less frequent, more regular, and she had less dyspnœa. Had passed a large amount of water from the uterus during the night: it was slightly stained with blood. During the afternoon she became worse, and in the evening had a profuse hemorrhage; the os was found patulous, about the size of a 25-cent piece, and the placenta presenting. The hemorrhage was profuse; but, having no dilators with him, and thinking it useless to tampon the vagina, he proceeded to forcibly deliver. As ether could not be used on account of the heart-clot, the operation was a frightful one, the patient shrinking and violently resisting. The placenta was at last with great difficulty detached from the uterus, and the head seized, but it came away in his hand; the body being afterward delivered, the uterus emptied and contracted. In a few minutes the patient reacted, the skin became warmer, the pulse stronger, and the intellect brighter; but at the end of two hours she sank in a collapse and died, without, however, any return of the hemorrhage.

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The doctor then called attention to the danger that would always ensue when unrecognized placenta previa occurs to complicate the induction of premature labor. He believed that the patient died, not from the hemorrhage, but from the previous depression, heart-clot, and shock.

Dr. J. L. Ludlow remarked that he had seen a case of craniotomy in which the woman never reacted, and died seven days after the operation. There was no fever; only inability to react.

Stated Meeting, December 5, 1872. Dr. William Goodell, President, in the Chair.

Dr. J. L. Ludlow exhibited

AN OVARIAN CYST

taken from a nullipara aged 35, who lately died in his ward at the Philadelphia Hospital. There was no history of syphilis; the woman died from valvular disease of the heart, acute pneumonia, and fatty degeneration of the liver and kidneys. The cyst involved the entire left ovary, and contained 18 ounces of pale albuminous fluid, which, when examined microscopically, was found to contain pus and blood-corpuscles, oil-granules, and cholesterine crystals.

Dr. W. F. Jenks exhibited a specimen of pelvic peritonitis. The uterus was bound down by fibrous bands; the left ovary was enveloped in the products of inflammation with dropsy of the left Fallopian tube.

Dr. J. L. Ludlow thought that the specimen was very instructive, as showing how futile it often was to attempt to restore a displaced uterus, when so fastened in its abnormal position.

Dr. Duer was interested in the flexed condition of the uterus, but found it difficult to understand how it could be produced by perimetritis alone, without endometritis; would like to ask if this retroflexion is regarded as a direct result from perimetritis

Dr. W. F. Jenks believed that in cases of flexion associated with chronic metritis, the latter is always an antecedent condition.

Dr. J. V. Ingham exhibited a

UTERUS AND FŒTUS IN THE SIXTH MONTH,

with the following history.

Mary McC——, aged 30, six months gone in her third pregnancy, was admitted to the Obstetric out-wards of the Philadelphia Hospital on November 9th, 1872. About two weeks before

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her admission, she took cold while washing clothes, and soon after her feet and legs commenced to swell. Before that time, she had been quite well; the œdema of the feet and legs increasing, she was transferred to the Diseases of Women's ward on the 18th of November, and then came under Dr. Ingham's care. The feet and legs were then greatly swollen, and the abdominal walls pitted readily on pressure. The uterus extended to the umbilicus, and the existence of pregnancy was apparent to all. Her face, although flushed, had a pinched and exhausted expression; her pulse was rapid and feeble, and her general condition was one of great depression. The urine, although examined three times, did not yield any traces of albumen; it was moderate in amount, and at times dribbled from the urethra. She was at once given tonics and diuretics, and carefully watched, as eclamptic spasms were dreaded. Treatment and watching were, however, of no avail, for early in the morning of November 26th she rapidly aborted, the fœtus and placenta being completely delivered before the house-resident could reach the ward. There was no after-hemorrhage; but, when seen by Dr. Ingham at 10 o'clock, 7 hours later, she was feeble, with a weak thready pulse, and a rather rapid respiration; with the exception of a few coarse râles heard over the upper part of the right lung, there seemed to be nothing the matter but debility. Whisky and quinia were ordered; but a few hours later she rapidly became worse, and at 11 o'clock of the same evening she died. The autopsy was made the next morning, 32 hours after the miscarriage and 12 hours after death. The brain was pale and apparently softened; the lungs were somewhat congested, but were free from any consolidation or pleuritic adhesions. The heart, liver, and kidneys were exceedingly fatty. The uterus contained the decidua, which had undergone extensive fatty degeneration.

The doctor then presented the specimens. The fœtus was 13 inches long, and had, therefore, according to Caspar, completed the sixth lunar month. This accorded with the mother's statement that she was six months gone. The placenta clearly exhibited the cause of the miscarriage, for it had undergone marked and extensive fatty degeneration, and about one inch of its periphery had lost half its thickness by absorption.

The uterus, laid open on its anterior surface, was seen to contain the decidua, which was still attached to the uterine walls. It did not, however, enter the cervix, but terminated sharply at the inner side of the os internum. The cervix uteri was 2½ inches long, but the vaginal portion had been reduced to a mere ring ¼ of an inch in thickness. The doctor called the attention of the

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Society to the great elongation of the cervix at this stage of gestation. He believed that this condition was first noted by Dr. Isaac E. Taylor, of New-York, in a paper on Placenta Previa, published some years ago. The specimen illustrated very clearly Dr. Taylor's views on the attachment of the placenta, for the decidua did not enter the cavity of the cervix uteri. It also explained how the passage of the sound in unsuspected pregnancy often fails to produce an abortion, for it could in this case have been passed 2½ inches without either puncturing the membrane or entering the cavity of the uterus. He also thought that this shortened condition of the vaginal portion of the cervix uteri was of interest, as it had deceived many and led them to suppose that the entire cervix was shortened, among others, Dr. Atlee of this city, who in his recent work on ovariotomy states that, examining a woman who was sent to him for an abdominal tumor, he found "the cervix shortened, softened, and expanded." The patient was delivered three months later at term, so that, when examined by Dr. Atlee, she was in the sixth month of pregnancy, and her uterus was in the same stage of development as the one now exhibited, in which it was impossible to say that the cervix was either shortened or had been expanded.

Dr. A. H. Smith asked if there was any evidence of syphilis?

Dr. Ingham replied that he had been unable to detect any.

Dr. J. G. Allen thought that this was an interesting point, and gave the history of a patient of his, who had had syphilis. He was married three times; the first wife aborted once, and died before a second conception; the second wife was never pregnant; the third wife aborted seven times in succession; the use of anti-syphilitic remedies enabled her to carry the eighth child to term: it was born alive, but died when eight months old.

The President remarked that he believed not only in the stability of the cervix during gestation, but also in an appreciable hypertrophy of it which persisted until removed by the process of involution. That the apparent shortening of the cervix was an illusion, produced partly by the upward traction on the vagina by the womb as it rises up out of the pelvic cavity, and partly by the limitation of the hypertrophic elongation to the supra-vaginal portion. Yet, he was not prepared to admit that in gestation the standard length of the cervix was as great as two and a half inches. The extreme length of the cervix in Dr. Ingham's specimen he thought could be attributed to the process of labor. Immediately after a premature labor or after one at term, however short the process, the cervix will

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always be found in a flaccid condition. It hangs down loosely like a skirt gathered up at the internal os. Its length, under these circumstances, is rarely, if ever, under two inches; but hitherto, he had attributed this gain, not so much to the hypertrophic elongation as to the stretching of the canal by the passage of the fœtus, and to the temporary paralysis of its tissues; that it took several hours, and sometimes days, for the cervix to regain its vital contractility; and that, in Dr. Ingham's patient, death had taken place probably before the cervix had recovered from this condition of paralysis.

Dr. A. H. Smith bore witness to the accuracy of Dr. Goodell's statement. He deemed the flaccid and fringe-like cervix to be the natural condition after labor, provided the womb has been wholly emptied. So impressed was he with the importance of this as a diagnostic point, that, for a number of years, he had taught his classes to be guided in abortions by the following rules: Whenever the cervix is found flaccid and flaring out like a funnel, the uterine cavity may unhesitatingly be considered empty. On the other hand, whenever the cervix remains firm and conical, or somewhat cylindrical, the inference is positive that some shred of membrane or a small fragment of placenta has not yet been expelled.

The President related the history of a case of

ADHERENT PLACENTA AND PARAMETRITIS IN A COW.

She had calved without any difficulty, but did not—in the language of the dairy—"clean herself." In other words, the placenta was not cast. For nine days she was "cleaning herself;" but the fragments of placenta thus expelled were so putrid as to poison the air of the stable, and to compel the free use of carbolic acid. She was now seized with a chill, had a high fever and sweated profusely. She refused to eat, rarely got up on her feet, and soon lost her milk. In the third week an abscess pointed and burst in the left flank, discharging a very large amount of pus. After this, she rapidly failed, and on the 27th day died. While the hostler was crowding her body into a pit, he stepped upon the right flank. Under his weight the skin broke, and a thick stream of pus gushed up over his person. Dr. Goodell thought that this case was an instructive one, in so far as it showed the liability of the lower animals to some of the child-bed accidents of the human female.

Dr. William F. Jenks read the following reports from the Committee on Microscopic Examination:

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CASE REPORTED IN THE TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY FOR MAY, 1871, IN THE "AMERICAN JOURNAL OF OBSTETRICS," AUGUST, 1871.

Congenital Hydromeningocele and Cephalœmatoma.

Your committee would respectfully report that they have examined the congenital tumor of the head referred to them, and found that there existed a growth about the size of an orange, attached to the lower portion of the occipital bone, near the foramen magnum. The bone was perforated at this point, an opening thus being formed which would admit the point of the little finger, through which there protruded internally the torn membranes. The tumor itself was covered with the hairy scalp, which in the lower portion seemed more resistant and thicker than elsewhere; but which gave everywhere a sense of fluctuation. On opening the sac, it was found to be filled with a sanguineous fluid, in which there floated larger and smaller coagula. On closer examination it was found, moreover, to be composite in character, consisting of three cavities—the smallest of which, elliptical in shape, was situated in the scalp itself, under the thickened portion, which had been detected before opening the tumor. The inner sac is easily traced to the opening in the bone, through which it passes, its walls being formed by the dura mater meninges; while between this and the integument there existed a space filled with a fluid in which there were numerous partially broken-down coagula of blood.

Your committee would suggest, as the probable mode of formation of this curious and interesting specimen, the occurrence of congenital hydromeningocele, which, passing through the opening in the occipital bone, thus peeled away the pericranium, and caused a hæmatocele, by the rupture of the vessels thus produced. The smaller cyst in the walls of the scalp itself was probably produced by an effusion of blood at the time of delivery, or may have been the result of pressure, as this corresponded to the part of the head on which the child would rest. Respectfully,

W. F. Jenks, M D.,
J. S. Parry, M.D.,
A. H. Smith, M.D.,
Committee.

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Parametritis—Cirrhosis Ovarii—Hydronephrosis—Hydrops Tubæ Fallopii.

Your committee would further report, that on examination of the second specimen referred to them, it was found to consist of the pelvic viscera more or less firmly united together by a mass of inflammatory exudation. The uterus was enlarged and indurated, the walls of the arteries thickened, but no great displacement of the organ had taken place. The right ovary with the corresponding Fallopian tube was firmly bound to the posterior surface of the fundus of the uterus, by sub-peritoneal adhesions. Both ovaries had undergone cirrhotic degeneration, and the Fallopian tubes on both sides were distended with fluid. The broad ligaments on both sides, but specially the right, were thickened; the anterior and posterior layer being separated by a mass of inflamed deposit. The connective tissue between the lower portion of the cervix and vagina was broken down, at several isolated spots, into a pulpy detritus, and a communication, probably post-mortem, existed between one of these foci and the posterior wall of the bladder. The right ureter was pressed upon and constricted by the pelvic deposit, and hydronephrosis existed to a considerable degree. The sigmoid flexure of the gut was very pronounced, and so firmly imbedded and surrounded by the inflammatory product as to form a valve-like obstacle to the passage of the fæces.

Microscopic examination of the tissue taken from the roof of the vagina anteriorly showed that the fibres of the muscular coat were separated widely from one another by a luxuriant growth of connective tissue, which in places was infiltrated with small crenated granular cells, having every appearance of pus-cells in a state of retrograde metamorphosis.

Respectfully,
W. F. Jenks, M.D.,
A. H. Smith, M.D.,
J. S. Parry, M.D.,
Committee.

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[The following should have begun on page 67, in place of the report of the September meeting. The error was not detected, however, until after the material preceding this note had been printed. The error will be more readily excused when it is known that the type from which these "Transactions" are printed is held over from several numbers of the *Journal*.—Ed. American Journal of Obstetrics.]

Stated Meeting, February 1, 1872. Dr. Wm. Goodell, President, in the Chair.

Dr. Wm. Goodell read for Dr. W. C. Perkins the following history of a

CASE OF EXTRA-UTERINE FŒTATION, LASTING THREE MONTHS BEYOND TERM.

On May 20, Mrs. K., aged 31, the mother of three children, came to my office to consult me about some uterine trouble, for which she had been under the treatment of another physician, who had "burned off some ulcers." I found her very anæmic, thin, and much reduced by pelvic pains, loss of appetite, and general malaise. The cervix was soft and flabby; the uterus enlarged, but I could discover no ulceration or inflammation, although there was a dark discharge from the vagina. On two separate occasions I repeated these examinations with like results, but did not venture to use the sound, as she had been informed by her previous medical attendant that she was pregnant. On May 29, with but very few pains and with scarcely any hæmorrhage, she expelled a globular mass, which her mother brought to my office on the supposition that it was an aborted ovum. It seemed to be a mass of apparently solid flesh, pale in color, and felt like a small placenta; but on a more minute examination I could detect neither cord nor point of attachment, and thought, therefore, that it was a blighted ovum. On the 30th of May I was sent for in the middle of the night, and found her suffering from every symptom of peritonitis. Under appropriate treatment this passed away in about ten days. On June 14 she was again attacked in a similar manner, and, in addition, by what seemed to be a pelvic hæmatocele, as upon a vaginal examination there appeared around the cervix a soft swelling exquisitely sensitive to the touch. Her condition was at this time truly critical; the pain was agonizing, the pulse weak, threadlike, and above 150; there was high fever, attended by frequent and very alarming collapses. She, however, revived out of this, but was still

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very feeble and prostrated, suffering from constant pelvic pains, which were kept only bearable by large doses of morphia.

Feeling the need of additional advice, on July 6 I called in Dr. William Goodell, who, after being informed of the supposed abortion in May, proceeded to make as careful an examination as the exquisitely tender vagina and abdomen would permit. He found the cervix immovable, the os patulous, the roof of the vagina hard, hot, and excessively sensitive, the abdomen tympanitic, the fever of high grade, and an irregular pelvic tumor projecting very decidedly towards the left iliac region. In view of all these symptoms, he pronounced the case to be one of perimetritis. Under treatment the symptoms again subsided, leaving in the left groin a large, irregular tumor, which was excessively painful to pressure. Upon an examination per vaginam, always unsatisfactory from the extreme tenderness, a tumor could be felt encircling the left side of the uterus, as far front as the median line and back to Douglas's cul-de-sac. On July 14, she was seized with another attack of violent pain, fever, and collapse of all the vital forces. I then called in Dr. D. H. Agnew, who diagnosed the case to be one of pelvic cellulitis. A second tumor now began to develop in the right groin, which acted precisely like that of the left. After a long and tedious illness, attended with repeated attacks of violent pain, fever, and collapse, she slowly began to mend. These tumors apparently subsided, but another one began to show itself in the median line.

Quite puzzled by these symptoms, on August 30 I called in Dr. J. S. Parry, who at once placed his ear upon the abdominal tumor, and, to my great surprise, detected a remarkably distinct fœtal pulsation and a remarkably loud placental bruit. Dr. P. thereupon pronounced the case to be one of simple pregnancy seven months advanced, and thought that all the previous violent symptoms and attacks had not been inflammatory, but hysterical. At that time he found the position of the os uteri normal for that period of pregnancy, and so was also the development of the uterus. He accounted for the abortion in May by the theory of a twin conception, and the casting off of one of the ova. After this discovery I quietly awaited events, fully expecting the labor would take place by the middle of November at the furthest. Meantime, she still suffered from violent attacks of pain, fever, and prostration. When December arrived with no sign of labor, and when, after repeated examinations, I could no longer find the os uteri, I began to fear that something was wrong. I forgot to

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state that on the 29th of November Mrs. K. accidently ran against the sharp corner of a table, receiving a very severe blow on her right side. From this time she no more felt the movements of the child, although before this accident they had been unusually strong. Nor could I detect any longer the fœtal pulsations, which hitherto had been very distinct.

About the middle of December, fully three weeks beyond the expected time of her confinement, her friends became clamorous to have me induce labor. This, however, I declined to do; but finding that her strength and appetite were failing daily, and that she had had night-sweats, in January 13, 1872, I again sent for Dr. Goodell. He found the vagina filled up by a large tumor in the Douglas cul-de-sac, containing fluid, in which he thought he could feel the body of a fœtus. Squeezing his whole hand past this obstruction with great difficulty, he discovered the long-lost os uteri, situated at least three inches above the superior aspect of the symphysis pubis. He now decided the case to be one of extra-uterine fœtation, and asked for additional counsel. Accordingly, on January 15, Drs. Goodell and Parry met me at the house of the patient. Under ether, a careful examination revealed a large cyst occupying the pelvis and Douglas's cul-de-sac, soft and fluctuating. The os uteri was high up above the pubes, as before stated, feeling like a puckered hole. The finger was introduced as far as the second joint, but did not reach the fundus. The cervix was entirely effaced, but the surrounding tissues, being neither bulging, soft, nor velvety, were utterly unlike those of pregnancy. The fœtus could be detected through the walls of the abdomen, but not through the vagina. It was immovable under taxis, and very different in feeling from one contained in a uterus. In order to confirm the diagnosis, a long exploring needle was pushed into the vaginal tumor, and the fluid collected gave the unmistakable odor of liquor amnii.

It was proposed, in case my patient grew worse, to open the cyst from the vagina and deliver the child in that way, but all operative interference was refused by herself and friends. At my next visit I was surprised to find her very much better. She was sitting up and talking with her friends most of the day. The following night, however, she was, as before, full of pain, suffering, and restlessness, with a slight dribbling of the liquor amnii from the small puncture. From this time she had constant pain, high fever, great prostration, and, finally, died on the 21st inst. from extreme exhaustion.

Dr. Parry remarked that before he exhibited the specimens he wished to add a few words to the clinical history which had

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just been read. When Dr. Perkins asked him to see this patient, on the 30th of August, the case struck him as being very peculiar. There were two symptoms which especially attracted his attention. The first was the superficial situation of the fœtus. When he placed his hand upon the fundus of the abdominal tumor, he felt a body recede from beneath his fingers, and afterwards strike them again, producing a sensation identical with that of ballottement. This was the first symptom which made him suspect the existence of pregnancy. The second symptom, the remarkable intensity of the placental bruit, has already been alluded to by Dr. Perkins. He had never heard it so plainly, though he had examined many pregnant women in the Philadelphia Hospital. At the same time the sounds of the fœtal heart were remarkable. He certainly never heard them so intense at the seventh month, or even at full term. The heart was heard in the usual position.

He also believed it to be worthy of remark that at this time the abdominal tumor presented no peculiar features. It was continuous with the uterus, and movement imparted to the fundus of the tumor was felt by the finger in contact with the os uteri, which seemed rather small for the seventh month of pregnancy. He was somewhat surprised to find himself unable to feel any part of the child through the vagina, a fact which was attributed at the time to the extreme pain produced by the examination. These peculiarities all impressed him, and he was unable to explain them at the time, but aside from these there was nothing in the physical signs which would lead to the suspicion of extra-uterine pregnancy.

Autopsy.—The abdomen was the only portion of the body examined. It was about the size of that of a woman at full term, and very dark in color. Upon section the connective tissue, muscles, and all the tissues beneath the skin were intensely black, but not gangrenous. A large tumor filled the cavity, pressing the liver and intestines upwards. The latter were almost hidden beneath the ribs and on the left side. Below, the tumor dipped down into and filled the pelvis. The anterior abdominal wall was easily and smoothly stripped off the anterior and lateral surfaces of the cyst. There were no adhesions whatever, and the parietal layer of the peritonæum was smooth, and, aside from its dark color, healthy in appearance.

At the lower portion of the anterior wall of the cyst was the body of the uterus, from either side of which ran the broad ligaments and the fallopian tubes, to be gradually lost in the surrounding tissues. The remainder of the anterior wall

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of the cyst was made up of the omentum, which was adherent to the fundus of the uterus. The external surface of the omentum was smooth and free from lymph, as was also that of the uterus and adjoining tissues.

Upon opening the cyst, a considerable quantity of dark colored but otherwise not abnormal liquor amnii flowed out, and a fully developed male child was found lying across the abdominal cavity, with its hand towards the left side. It had evidently been dead for some time, as it was dark-colored, and the cuticle was commencing to peel off. The placenta, unusually large and elevated, lay just above the crest of the ilium, partly over and partly to the right of the spinal column. It was very large, and beneath it was an immense decolorized coagulum of blood, nearly three inches thick. This was easily separated from the abdominal wall, leaving a clean but slightly roughened surface, while the placenta was intimately adherent to and extremely inseparable from the clot of blood. The cord was small, shrivelled, and attached to the extreme upper margin of the placenta.

The uterus was about five inches long. The os was carried far above the pelvis, as described in the history. The cavity of the organ contained no decidual membrane, and, aside from a little redness, its lining membrane presented no abnormal appearance.

The fimbriated extremities of the fallopian tubes were lost in the tissues upon either side, and could not be recognized in the dissection. The ovaries were carefully sought, but were not discovered on any part of the cyst wall. All these tissues were stretched thin, and insensibly blended together. The bladder was not enlarged, and its lining mucous membrane was entirely healthy.

Dr. William Goodell stated that he wished to supply an inadvertent omission in the interesting history of Dr. Perkins's patient, which gave him (Dr. G.) far more credit than he deserved. It was a second trip in diagnosis—for he had made two in this highly instructive case. This last error he was anxious to note, because he thought it would materially assist others in the diagnosis of these puzzling cases.

Exactly six months after his first visit, and five weeks after the death of the fœtus, on January 4th, he was called in a second time by Dr. Perkins, in order to discover what had become of the os uteri, and to decide as to the propriety of inducing labor. At this time, finding the vagina blocked up by a fluctuating tumor, in which he thought he could feel the limbs of a child, and finding, also, the os uteri situated very high above

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the pubes—in fact, almost under the umbilicus—he had pronounced the case to be one of retroversion of the gravid womb, caused by firm adhesions at the fundus. So perfect was the illusion, and so confident was he of the correctness of this diagnosis, that, at a third visit (January 14), he attempted to introduce a flexible catheter into the uterus, in order to start labor-pains. His inability to pass this catheter very far up gave him the first hint that he was dealing with an extra-uterine fœtation. In reading up the literature upon this subject, he was struck with the frequency of this condition of apparent retroversion; a symptom which had misled numerous excellent obstetricians. For instance, in a strikingly analogous case, published in the twelfth volume of the *London Obstetrical Transactions*, Dr. J. Hall Davis attempted to raise up the fundus of the apparently retroverted womb, and, failing in this, introduced successively into the os uteri a sponge-tent and Barnes's dilators. In this case, the extra-uterine fœtation was not discovered until an autopsy was made, indeed it was not suspected, although the woman was eight months gone.

With regard to the placental apoplexy of old date, which Dr. Parry had pointed out, he accounted for it by the violent blow received late in November, when the lady ran against the corner of a table. The jar had undoubtedly detached the placenta, and had caused a concealed hæmorrhage, from which the child had perished; for, from that time, no signs of fœtal life were present. The remarkably great size of the placenta he attributed to the *error loci* of this organ; for, in the nourishment of so large a fœtus, a very large vascular area could alone compensate for the absence of vast uterine sinuses. In looking back upon the clinical history of this case, he was now satisfied that the supposed blighted ovum expelled in May, which had mystified him so completely, was nothing more or less than the exfoliation of the decidua uterina. In all extra-uterine fœtations this membrane, he believed, is invariably formed and usually cast off in shreds; but he would much like to have the experience of the members present with regard to the frequency of this expulsion of the whole decidua in one mass. He wished also to hear whether others had noticed the condition of apparent retroversion.

There was another point omitted in Dr. Perkins's paper, which he (Dr. G.) deemed of sufficient importance to relate, and that was the periodicity of the attacks of pain, fever, and of collapse. Mrs. K. had not seen her catamenia since the expulsion of the decidua, but up to that time they had appeared at intervals of about three weeks. Now, these attacks of extreme

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suffering corresponded in time with her previous catamenial periods, and were therefore possibly due to the congestion induced by the menstrual molimina. Such a periodicity, he thought, might have some diagnostic value in discriminating this very fatal and extremely unrecognizable accident of impregnation.

Dr. Jenks spoke at length upon the implantation and the development of the placenta. He also described the development of the fœtus in ovarian pregnancy, and called the attention of the Society to Dr. Greenhalgh's method of killing the fœtus in three cases of extra-uterine fœtation by injecting a solution of morphia into the cyst.

Dr. A. H. Smith mentioned two cases of extra-uterine fœtation that had occurred in his practice. In the first, a seven months' fœtus was extracted through the walls of the vagina, by Dr. D. H. Agnew. The patient died a few days later of peritonitis.

In the other case, extra-uterine pregnancy was not suspected until revealed by an autopsy, the patient having died from peritonitis following an attempt to restore a supposed retroverted uterus to its normal position. In this case the decidua was cast off entire, but it was mistaken for that of an ovum expelled early on account of the supposed uterine displacement.

Dr. J. G. Allen thought that extra-uterine fœtation was far more frequent than is generally believed. He felt certain that he had met with at least three cases. In 1863, he attended a woman for peritonitis, caused by an induced abortion. In 1869, she attempted to produce another at about the second month of pregnancy, but failed, although she described something resembling a decidua as having been passed, and for a time supposed herself relieved. Soon afterwards she called upon him, complaining of an incessant desire to urinate. This was two and a half or three months from the time of supposed conception. He found a considerable tumor behind the uterus, but unattached to it; he had great difficulty in passing the uterine sound. The os uteri, or rather the anterior lip, was readily exposed by the speculum, but the body was carried forwards and far upwards behind the pubes. The sound had to be strongly curved, and then it entered five inches. Finding the uterine cavity empty, he believed it to be a case of extra-uterine fœtation, which diagnosis was concurred in by Drs. Agnew and G. Pepper. The latter gentleman was much interested, and examined the patient several times. Later he could by ballottement feel assured of the presence of a fœtus. They (Drs. Allen and G. Pepper) then determined to try and

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destroy it by means of the galvanic current. One pole of an ordinary electro-magnetic machine was passed through a common glass speculum, and applied to the vaginal portion of the tumor, behind the neck of the uterus. The other pole was placed upon and over the tumor, when it could now be felt in the abdomen. This was repeated on several occasions. A weak current was first used, producing no visible impression. On the third application, a very powerful current was turned on. In a few moments the patient recoiled from the current with considerable fright, declaring she felt a motion as of something turning over in the abdomen. The current was then somewhat moderated, but continued for full five minutes more.

A moderately strong current was afterwards applied in the same manner, every three days, for a period of about two weeks. The tumor, which had hitherto been rapidly increasing, first ceased to grow, then gradually for several months diminished; all sense of anything like ballottement disappeared. At the present time—three years after the occurrence—there is a well-defined tumor about the size of a large fist, which can be felt per vaginam, but which gives no trouble whatever. Previous to the use of the battery, she suffered greatly from abdominal tenderness and occasional colicky pains. Dr. Allen had also another very similar case in 1870, which at about the tenth week of supposed gestation was treated in the same manner, with very similar results. In this case, however, nothing like ballottement was ever detected, and the application of the galvanic current produced no sense of motion in the tumor, which, however, gradually diminished from the size of a large fist to that of a goose's egg, in which condition it still remains, giving no trouble.

The third case was a colored woman, in whom there was a cessation of the menstrual flow and an apparent increase of the size of the uterus for seven months. She supposed herself pregnant, and engaged Dr. Allen to attend her. No examination was made at this time, as the patient complained of nothing abnormal till after the sixth month. She then became subject to violent attacks of colicky pains and great abdominal tenderness. A tumor of proper shape and size for her supposed condition could be readily felt in the abdomen; extra-uterine pregnancy was not suspected. After seven months had elapsed, the apparently enlarged uterus decreased in size, followed by a bloody discharge per vaginam; this occurred irregularly every few weeks, each attack resembling a very painful menstrual period. Dr. Allen now made a special examina-

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tion, and passed the uterine sound five or six inches. A tumor could be detected, apparently in some manner connected with the uterus, which caused him to think it a fibroid growth. Subsequently she improved; the size of the abdomen still further decreased, and she left the city. Some months later he heard that she had been very sick, had passed fœtal bones per vaginam, and finally died. An autopsy was made by the attending physician, of which, however, Dr. Allen had no professional account. The mother of the patient has, however, shown him various fœtal bones that were removed at the post-mortem examination.

Dr. Packard exhibited a "safety diaper pin," two and a half inches in length, that had been swallowed by a child ten months old, and after ten days was passed per anum.

Stated Meeting, March 7, 1872. Dr. Wm. Goodell, President, in the Chair.

Dr. Parry presented a specimen of primary cancer of the vagina, occurring in a patient, the mother of four children. When she was admitted to the wards of the Philadelphia Hospital in June, 1871, she complained of no especial trouble, nor did her appearance indicate any serious disease. Soon after admission, however, a profuse hæmorrhage from the vagina occurred, followed by the rapid appearance of the cancerous cachexia.

A careful examination revealed a tumor involving the recto-vaginal septum; it was ulcerated and hæmorrhagic. The os uteri was but slightly affected. The patient after repeated hæmorrhages sank from exhaustion, and died on the 10th of February, 1872. At the autopsy the tumor was found to have only involved the vagina, ulcerating through into the rectum, and almost through the upper posterior wall into the peritonæum. The body of the uterus presented no evidence of disease. There was a very slight ulceration of the os uteri. The external genitals were not affected, and the bladder was also free from disease.

He then spoke at some length upon the extreme scarcity of primary cancer of the vagina, and stated that he had never before met with a similar case.

Dr. Jenks stated that when he first saw the patient at the Philadelphia dispensary, before she went to the hospital, she complained of nothing except the occurrence of a hæmorrhage from the vagina. Previously to this she had suspected nothing. He at that time discovered the thickened and ulcerated posterior vaginal wall and an examination per rectum revealed

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the existence of a small tumor occupying the recto-vaginal septum.

Dr. Goodell mentioned a somewhat similar case that he had reported two years ago to the Society. It was an erectile cancroid of the vagina, but there was no disease of the uterus (American Journal of Obstetrics, May, 1870, p. 180).

Dr. Goodell exhibited to the Society an extremely ingenious instrument for vaccination, that had been devised by Dr. Dawson, of New York. Dr. Goodell spoke very favorably of its operation in actual practice, especially on children.

Stated Meeting, April 4, 1873. Dr. Wm. Goodell, President, in the Chair.

Dr. Wm. Goodell exhibited a specimen of

FIBROID TUMOR IN A POST-PARTUM WOMB.

The womb contained in its posterior wall a fibroid larger than the ovum at term. It had been removed by Dr. W. B. Atkinson from the body of a light mulatto woman, aged thirty-five, who died quite unexpectedly on the tenth day after giving birth to a fully-developed but still infant. This enormous tumor must have grown very rapidly indeed during gestation, for previously to her delivery she had not suspected its existence. She was, however, extremely fat, and the thickness of her abdominal walls had probably prevented an earlier discovery. Although a primipara, the labor was not tedious, but this was most likely owing to the presentation—that of the feet—which enabled the attending physician to render early assistance. Strange to say, there was no post-partum hæmorrhage, nor any other complication whatever. After the birth of the child and the delivery of the placenta, the size of the womb led the physician to think that there was yet another child to be born. The woman went on well for a few days; was able to sit in a chair, when she suddenly became "very weak," as her friends described it, and died quite unexpectedly. Although the fibroid had commenced to soften at its centre, which contained a cavity filled with putrilage, Dr. Goodell remarked that he could not attribute the death of the woman to any septic or pyæmic cause. The clinical history of the case pointed rather to embolism of the pulmonary

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artery. That the causes of sudden death after delivery were always obscure, in spite of the light which science had thrown on them. But in this case the theory of puerperal embolism seemed to him very defensible; for, from the very imperfect contraction of the womb—splinted up as it was by the fibroid—some one of the physiological clots of the unconstringed uterine vessels could easily have become long enough to project into a large vein, where its tip might have been washed off and swept into the pulmonic circulation. He stated that pregnancy very much enhanced the peril of a woman whose womb contained a fibroid tumor, whether seated in the upper or the lower segment; but that, very fortunately, either from the flux of blood, which washed the ovum away, or from a disturbance in the relation of the Fallopian tubes to the ovary, conception rarely took place. If pregnancy should happen, the unequal development of the uterine walls would usually bring on an early abortion. That when, in a pregnant woman, a fibroid was found seated in the lower segment of the womb, and in front of the presenting part of the child, causing a fear that the labor might prove difficult, dangerous, or impossible, the physician had certain rules for his guidance which he could unhesitatingly adopt. But that there was no unanimity in the profession with regard to the proper conduct of a physician during the pregnancy of one of his patients who was known to have a large fibroid in the upper segment of her womb. That in view of the danger from septicæmia, or from pyæmia, from rupture of the womb, from peritonitis, uncontrollable post-partum hæmorrhage, and from unruly and exhausting after-pains, he himself, under such circumstances, would be disposed to follow the teachings of Nature, who usually in these cases greatly abridges the term of gestation.

Dr. J. H. Packard asked the Society for information in regard to the practice of its members in

THE APPLICATION OF THE OBSTETRIC FORCEPS.

He wished to know at what part of the second stage of labor the necessity for their use was generally recognized, and asked whether the wearing out of the expulsive efforts of the mother did not always constitute a demand for their application. He believed that the only objections to their use that can be advanced are, 1st, the aversion and prejudice of the patient against them; 2d, the danger to the perinæum when the other symptoms do not demand their use; 3d, the danger to the fœtal skull, although such injuries, and sometimes frac-

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tures, do not always result as badly as might be expected, and cited cases in illustration.

Dr. A. H. Smith stated that he had long made it his rule, in normal pelves, never to allow his patient to suffer long after the full dilatation of the os uteri had taken place, and in contracted pelves never to wait for such dilatation. He never delays their application if such delay would cause a prolongation of suffering either to the mother or to the child. He had always taught, and firmly believes, that there can be no possible injury to either if the forceps are properly applied, and the proper degree or direction of traction is made. The form of the instruments must not deviate greatly from that adopted by either Dr. Hodge or Dr. Davis, and the blades must be applied to the sides of the child's head in order to secure the greatest immunity from danger. If so applied, their use always diminishes the liability of injury to either mother or child. If not applied to the sides of the head, there is great danger of injury resulting from the direction of compression. In the oblique application there is always a danger of paralysis of the eye, fracture, or necrosis of the frontal bone, and almost a certainty of distortion of the facial tissues. As regards the perinæum, he believed that there is less danger when the forceps are used than when they are not, owing to the complete control that they give over the motions of the child's head, and the great ease with which, by the forcible flexion of the head, its too rapid passage through the vulva could be prevented.

Dr. Duer thought that the ground had been completely covered by Dr. Smith, and believed that it was a question of judgment and skill, the more of which the obstetrician possessed, the more frequently did he use the forceps.

The President hoped that there would be a free expression of opinion, as he believed the subject had a medico-legal value in so far as injury to the mother or child is concerned.

Dr. Betts had often experienced the difficulty mentioned by Dr. Packard in knowing when to apply the forceps. He believed that the sanction of the Society for their early application would have great value, and mentioned several cases where the ignorance or delay of the attending obstetrician nearly killed the patient.

Dr. Githens quoted Dr. Hamilton's notes of nearly 800 cases of labor and no still births, the forceps having been applied once in every eight births. Dr. Githens used them about once in every seven cases, principally in primiparæ, applying them, however, as soon as possible in all cases.

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Dr. J. S. Parry said that he always used them as soon as he could. Thought that there could be no danger if properly applied, but did not agree with Dr. Smith as to the absolute necessity of invariably applying them to the sides of the child's head.

Dr. Jenks quoted foreign authority in support of their use in the early stages of labor, and mentioned a case recently occurring in his own practice where the spine of the ischium projected into the cavity of the pelvis. He applied the forceps an hour after the second stage of labor had commenced, and easily delivered, thus saving the mother many hours of suffering.

Dr. J. L. Ludlow remarked that from the shape of the instruments they should be applied to the sides of the head, but the best obstetricians have been deceived as to the position of the blades. If the end is accomplished, it does not matter exactly how the forceps are applied. He, however, always tried to put them on the sides of the head. He mentioned a case where the child had been temporarily deformed by the oblique application of the forceps to its head, and also a case in which, there being obliquity of the uterus, a contracted pelvis, and a large head, the consultant was unable to apply the forceps in any position.

Dr. W. B. Page said that he applied the blades as nearly along the long diameter and over the sides of the child's head as possible. Occasionally you have to apply them as you best can. Make traction in the axis of the superior strait, pelvis, and vulva. It is difficult to apply them to the head after the body has been born.

Dr. A. H. Smith stated that he preferred the Davis forceps with the button lock. He thinks that they fulfil every indication needed. They have advantages over Hodge's forceps. He then referred to a case where the Hodge forceps had been applied to the child's head in a contracted pelvis, two hours had been occupied, and the child could not be delivered as the instruments slipped. It was a case in which there was an abortive effort to form a double-headed monster. The Davis forceps, being then applied, were successful. The head was so large that the blades of Hodge's forceps were in a parallel position, and unable to grasp the head and retain it. He contrasted the Davis and Hodge forceps strongly in favor of the former; there is more compressing power in the Davis forceps. It has been said that it is impossible to apply them at the superior strait; but it can be done, he having frequently so applied them. He thought that they can be applied, and can

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deliver a living child, where it is fruitless to use any other forceps. Objections have been made to the handles of the instrument. But they are not needed to drag on; it is not necessary to draw in the line of the handles, but in that of the pelvic axis. Pressure is to be made on the lock, and not traction on the handles; the latter being used only to steady the forceps. The temptation is strong in young men to draw too forcibly on the handles. The great advantage of the button-lock is the ease with which it is locked, as the natural tissues are not pinched or in the way.

Dr. J. L. Ludlow enquired if there was not more likelihood of hæmorrhage after rapid deliveries with the forceps, as the labor may not be sufficiently advanced for the uterus to be suddenly emptied. He thought that the uterine tissues were not prepared for delivery when the labor was hastened as rapidly as represented by Dr. Smith.

Dr. A. H. Smith said that no obstetrician would drag a child from the mother except in rare instances. If the forceps are applied correctly, no injury can accrue to either mother or child. It is said by some that the forceps should be applied to the sides of the pelvis, and the head grasped regardless of position. Dr. Barnes assumes that in the oblique and transverse cranial positions the forceps should be applied to the sides of the pelvis. Dr. Smith believes that this is dangerous to both mother and child. No mistake should be made in the diagnosis of presentation and position; it is absolutely necessary to know how the sides of the child's head lie, unless there should be some malformation. No mistake can be made if the ear can be felt; this is a positive sign. If the head is grasped over the face and occiput, the difficulty in contracted pelves is increased, not diminished. In his experience he had found it easier to apply the forceps on the sides of the head in the transverse position, when the head is above the superior strait, than when it has descended and become impacted.

Stated Meeting, June 26, 1872. Dr. Wm. Goodell, the President, in the Chair.

APOPLECTIC PLACENTA.

Dr. A. H. Smith exhibited for Dr. Ellwood Wilson an apoplectic placenta expelled during the seventh month of gestation. There were no abnormal symptoms during the pregnancy, and nothing had occurred to attract attention until the sudden labor, and its termination in the expulsion of a dead child. The placenta was small, with a large coagulum in one lobe. There was no history of any accident to account for the

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placental hæmorrhage. There was a slight calcareous deposit upon the maternal surface of the placenta. The patient is not of an apoplectic tendency, but this is the second miscarriage from this cause.

Dr. W. F. Jenks remarked that the specimen presented evidences of former hæmorrhages similar to the one that caused the miscarriage. He attributed them to a weakness of the vessels rather than to disease.

Dr. J. L. Ludlow thought that the most interesting point was the condition of the patient; if apoplectic, it constituted an element of prognosis in future labors.

Dr. W. Sinkler stated that he knew the patient, and that there is no predisposition to apoplexy; on the contrary, she is unusually healthy.

Dr. Wm. Goodell ascribed the hæmorrhage to the calcareous deposits. The placenta thus became too stiff to respond immediately to the alternate contractions and dilatations of the womb, or to sudden succussions, and, as a consequence, was partly detached. He had seen several hæmorrhages attributable to this cause, and regretted that at the previous abortion the placenta had not been examined for lime patches.

The discussion on

THE FORCEPS

being next in order, Dr. Robert P. Harris exhibited seventeen varieties of obstetrical forceps, in illustration of the fact, that with but few exceptions, these instruments have not been made either with the view of fitting the sides of the fœtal head or of preventing the marking of the scalp, the fenestræ being still of the same loop-shape that was adopted by Chamberlain, with their edges scarcely at all bevelled or rounded off. The improvements made by Davis of England, and Hodge of this city, with subsequent changes by William Harris, Bethel, and Ellerslie Wallace, have introduced into the practice of Philadelphia, and in many parts of our country, through the alumni of its two medical schools, the use of instruments made especially with a view to avoid the various objections which have been urged against the forceps as a means of injury to the mother and child. No man has labored more carefully for the accomplishment of this object than Professor Hodge, producing his present instrument step by step in gradual changes and improvements, as experience pointed them out to him, commencing with an important alteration in the long forceps of Baudelocque, and gradually departing from it until but little of the original type is left.

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In illustration of this fact, Dr. Harris exhibited two of the early improvements of Dr. Hodge as historical curiosities: in one he changed the cephalic curve, and in the other the pelvic, opening the fenestræ of the second, bevelling their edges, and giving them an oval instead of loop shape. These instruments were made unnecessarily heavy according to our present ideas, but at the time of their production strength was imparted more by weight of metal than hardness of temper, the same amount of stiffness being now possessed by forceps of half the weight. Even the final shape of the Hodge forceps, as made by Rohrer, although much heavier than those made now, was sometimes materially altered in use by the bending of the shanks under pressure.

The late Dr. William Harris, who practised obstetrics extensively for forty-six years, perhaps made a more frequent proportionate use of the forceps than any of his contemporaries, employing them in about one-seventh of his cases, and with such success that for thirty years he did not lose a patient in labor or from its immediate effects. He was very partial to the blades of Davis, and devised an instrument of remarkable lightness, which, although extensively used, never became altered in shape. It was made by Schively about twenty-five years ago, and closely resembled the instrument now known as the Wallace forceps, except that the latter has much longer shanks which are more directly superimposed, and is better adapted for use at the superior strait, for which the former was not intended, Dr. Harris employing for that purpose the Hodge forceps. The Harris forceps were intended to shorten labor and prevent exhaustion in women who were deficient in muscular force, and who, if unaided, would accomplish in many instances their own delivery, but at the expense of long suffering and wasted strength.

The Wallace forceps have come into very extensive use, especially among the graduates of the Jefferson Medical College. The instrument is a combination of the Davis blades and Hodge handles, both somewhat modified, is very light, and well adapted in skilful hands as a tractor, to deliver the fœtal head without injury to the mother or pressure-marks upon the child.

The seventeen varieties exhibited were as follows: Siebold's, Baudelocque's, Busch's, Ziegler's, Haighton's, Rohrer's, Philadelphia, two experimental specimens of Dr. Hodge, Hodge's, Davis's, Sir James Y. Simpson's, William Harris's, Bedford's, Elliot's, Denman's, Comstock's, and an improved Haighton. There was also shown a pair made in imitation of Davis's,

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but so badly shaped as to produce in the hands of an inexperienced physician such extensive lacerations of a woman's vagina and perinæum as to cause her death, and to result in a suit for malpractice which cost the operator $5,000. The Siebold forceps had also been made by excessive force the means of fracturing a woman's pelvis, and causing her death.

The Haighton forceps were at one time quite extensively manufactured in this city, and largely used, because their broad oval fenestræ, with concave edges, render it possible to operate at the inferior strait without injury to the child's scalp. They were not well shaped for avoiding rupture of the perinæum, and were displaced by the curved instruments of Davis, Hodge, etc. With the exception of the Haighton, Hodge, Harris, and Davis forceps, all those exhibited had narrow loop-shaped fenestræ, which could not admit the parietal protuberances of the fœtal head.

The forceps of Bedford and Elliot of New York, Simpson of Edinburgh, Comstock of St. Louis, etc., are all formed after the German type, with long blades and wide interspaces, and are based upon the idea that it is more important to introduce the instrument transversely, as regards the pelvis, than to apply the blades over the sides of the child's head. The advocates of these instruments contend that they are intended to act as tractors, and to avoid compression, for which purpose the majority of Philadelphia obstetricians believe they are not suited, because the adaptation to the sides of the fœtal head requires less compression to avoid slipping, by reason of the increased friction produced by contact with a long, broad, oval surface, and of the projection of the parietal protuberances through the fenestræ. They contend that the blades of Davis, by enclosing the fœtal head with the parietal protuberances projecting, accompanied by a minimum degree of pressure, command the head in its movements, diminish its size in compensation for the space occupied by them, and enable traction and rotation to be made to the greatest advantage, and in close imitation of the natural process of labor.

Dr. Harris believes that one great cause of the difference of views held by obstetricians with regard to the various uses and capabilities of the forceps is due to the differences of form in the instruments respectively employed, and that upon sound mechanical principles it will be found that a fitting object can be more securely grasped, and with less pressure, than one which does not fit the surfaces of the forceps applied to it. It is upon this very principle that the fenestrated forceps for calculi have been designed.

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The President remarked that in the application of the forceps he was governed by the position of the child's head, and not by the curve of the pelvic axis. He therefore always aimed to apply the blades in the direction of the occipito-mental diameter, and thus seize the head in its biparietal diameter. He thought, however, that this—the cephalic—method of application should not be taught dictatorially to students, to the utter exclusion of the pelvic method; some scope should be given them. For, not only does the former require a knack which can be gained only by experience, but cases will arise in which it would be found impossible. For instance, in certain rare forms of irregular development of the pelvis; in cases of children long dead, and therefore jammed down—head, neck, and shoulders—into the pelvis; or in neglected cases in which the soft parts of both mother and child have become swollen—cases in which the accoucheur may be thankful if he gets the blades on at all. While, therefore, the student should be taught to seize the head by its sides, he should also at the same time be told that, when foiled in this, he is justified in grasping the head wherever the blades adjust themselves.

That his reasons for regarding the child's head rather than the mother's pelvis were as follows: Firstly, that the uniform head-curves of the forceps are made evidently for the only two uniform surfaces of the child's head—viz., its sides; and that there only are the blades the least hurtful. For there they become immovable, as it were integral parts of the head, and there can the brain be compressed with the greatest safety. The pelvic curves were an afterthought, not absolutely necessary, but merely for convenience of application. Smellie, who devised the pelvic curve, did so simply to get his blades more readily over the sides of the child's head. Secondly, that the transit of the fœtal head through the obstetric canal is easiest, and demands less force, when the cervico-bregmatic plane preserves a parallelism with the successive planes of the pelvis through which it passes; and when the occipito-mental diameter coincides with the axis of the obstetric canal—viz., when synclitism is preserved, and the head descends edgewise. To maintain these conditions is, therefore, the obvious duty of the accoucheur. Hence, when called upon to assist nature, he should be obedient to her laws, and should carry out her intentions. He should, therefore, so apply the forceps to the sides of the head that the posterior fontanelle would be in a line with the shaft, and the sagittal suture equidistant from each blade. For then, and only then, will the

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line of traction coincide both with the long diameter of the head and with the axis of the obstetric canal. When, on the other hand, the blades are applied obliquely on the head—that is to say, on ununiform surfaces of the head, for which their uniform curves are ill adapted—not only will one of them be further on than the other, but the handles will be thrown to one side of the occipito-mental diameter, making an angle with it. As a consequence, lateral obliquity is induced, the condition of synclitism is destroyed, and the long diameter of the head is forcibly deflected from a coincidence with the obstetric axis.

He further contended that the German school and its adherents, by ignoring the absolutely necessary head-curve of the blades, and by regarding only their factitious pelvic curve, were not only violating—as has been shown—the plain laws of mechanics, but were in fact unwittingly doing the very thing which they deprecate. For if, in an unrotated position of the vertex—say, of the L. O. A.—the blades are applied in the transverse diameter of the pelvis—viz., obliquely on the head—one of two things must happen, either, as in some cases, the blades will remain constant, and the head rotates within them—which fortunately for the integrity of the child's features is by no means the rule—or else, *pari passu*, with the descent of the head will the blades rotate. In the latter case, then, at the close of the labor, the convex edges of their pelvic curves will be deflected as much to the left of the axis of the obstetric canal as they would have been to the right of it had the application been made at first to the sides of the child's head. That in this respect, therefore, there is in each method of application no essential difference so far as the traject of the blades is concerned. For, by the German method, at the close of labor, this assumed case of a L. O. A. position, the blades will be found in the same diagonal position, *quoad* the pelvis, as they would have at first taken had they been applied to the sides of a head in the R. O. A. position.

In other respects, however, there are vital differences between the two methods. For instance, in a right occipito-posterior position of the vertex demanding assistance, whenever the blades can be adjusted to the sides of the head, and traction with a firm grasp is then made in the direction of its long diameter, or as near to it as this often embarrassing position will permit, nature is so closely imitated that anterior rotation of the vertex takes place relatively more frequently than in unassisted cases. That in such positions he had repeatedly been compelled to hasten the removal of the blades, lest their

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pelvic curve should become reversed by the rapid rotation of the head. In fact, on two occasions he had been caught with his forceps turned upside down before he could remove them. Now mark what happens when, in the same position of the vertex, the blades are passed up along the ilia. The male blade, by gliding over the right brow of the child's head, tends to rotate the forehead to the pubes; while the female blade, in its passage over the left occipital region, contributes as well to effect the same change by pushing the occiput towards the sacrum. When the blades are locked and traction is made, a rotation of the vertex into the hollow of the sacrum is so inevitable, that the advocates of this method console themselves for such a misadventure by trying to believe, that it makes very little difference whether the occiput rotates anteriorly or posteriorly. But were the question referred to the woman herself, it would not remain mooted very long.

That while locking in the pelvic application of the forceps is sometimes easier than in the cephalic, yet it is often more difficult from the tilting up of the concave edge of one blade, and of the convex edge of the other, by riding upon opposite inequalities. That the gripe is always less firm; indeed, so much so that some English forceps have a third blade, shortened, and moulded to fit the occipital region. That the integrity of the perinæum is far more threatened because the blades, from not admitting into their fenestræ the parietal protuberances, and, therefore, from not being embedded in the child's tissues, add their thickness to the bulk of the head. That there is greater danger from facial paralysis, dangerous wounds, and from positive mutilations; the very graphic warnings against these accidents proving that they have occurred. That Tristram Shandy's experience was no fancy sketch, for he (Dr. G.) had seen disfiguring scars, and had heard of two infants in this city which bled to death from sloughing wounds of the brow caused by the frontal blade. That the occipital blade may destroy life by pinching the cord when coiled around the neck, or by too great or too protracted a pressure upon the medulla oblongata. That the danger from this pressure upon the base of the brain is so well appreciated that, when the forceps are applied in the ilia, a rapid delivery is aimed at in order to save the child's life. Thus, as late as in 1867, two eminent Scotch accoucheurs, in a discussion before the Edinburgh Obstetrical Society,* made the startling statement that they rarely kept the forceps on longer than

* *Edinburgh Medical Journal*, vol. xii. p. 755.

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fifteen minutes, and never over twenty minutes. What vibratory and rotary movements of the forceps handles; what trituration of the mother's tissues; what injuries to the child, did not this desperate haste imply! No wonder that the forceps is in bad repute in Great Britain! No wonder that the craniotomy statistics of that country excite the sneers of Italian physicians—as the preface to Dr. Barnes's last work informs us! That an English physician had written a paper upon the long-continued influence of abnormal parturition on the mental and physical condition of the child;* and in it had tabulated several forceps deliveries as the cause of convulsions, strabismus, difficult deglutition, and spastic contractions. In each one of these instrumental cases such injuries were sustained as, "after twenty minutes' application of forceps, a child was born with laceration at external right frontal eminence and behind ear; did not rally for three hours"; "child black, swollen, born with wound on left forehead"; "child black and supposed to be dead, restored with difficulty"; and "child's face lacerated." Such injuries could not have happened had the blades been adjusted to the sides of the child's head, which they exactly fit.

That he (Dr. G.), being alive to the fact that he was extracting living flesh from living flesh, and relying upon the well-established truth that compression of the head in its transverse diameter is the least dangerous to the child, had often been over an hour, and sometimes over two hours, at the forceps. That, when the forceps are thus applied, when traction, as a rule, is limited to the times of the pains, and during the intervals the handles are unlocked or slightly separated; when the dorsal decubitus is preserved, and the physician makes direct traction with his arms, and not with his back, standing upon both his feet, and not laying out his whole strength by bracing them; and, lastly, when the force is exerted more by pushing the lock backwards and downwards rather than by traction on the handles, or by that leverage movement so liable to be abused by beginners, moulding of the head may be allowed to go on for an almost indefinite length of time, with safety both to the mother and to the child.

So impressed was he with the advantages gained by applying the forceps to the sides of the head, that there were to him no exceptions to this rule, not even in transverse cranial positions at or above a brim shortened in its conjugate diameter. The objection that the bladder, urethra, and rectum will sus-

* *London Obstetrical Transactions*, vol. iii. p. 293.

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tain injury is purely theoretical, for no force should be used in the application, and, when adjusted, the blades are lost upon and buried in the soft tissues of the scalp and cheeks, which bulge up around and through the fenestræ. Indeed, the supposed danger is actually much less than when the other plan is resorted to, since the bilateral compression at once compels the equitation of the parietal bones, and the consequent reduction of the offending biparietal diameter. Another objection had been raised—one which, in his genial way, the late Prof. Elliot had made to him, in a discussion upon this very point—viz., that in the normal pelvis the axis of the superior strait strikes a point on the coccyx a little above its tip; that the double-curved forceps, applied in the conjugate diameter, becomes virtually a straight one so far as its relation to the pelvis is concerned, and that, therefore, it cannot, at the brim, be applied to the sides of the head in transverse cranial positions. This was the hackneyed argument of many European authors; but to this he (Dr. G.) could reply, that practically he had found this method of application to be more easy in such positions than in unrotated heads arrested in the pelvic cavity; that some good British accoucheurs still use the straight forceps at the brim; that one of the best cephalotribes (Kidd's), constantly applied above the brim, has straight handles and blades; and that, in pelves contracted in the conjugate diameter, the axis of the superior strait often strikes a point in the perinæum anterior to the coccyx—for the rachitic disease which has caused this deformity has also hollowed out and pushed back the sacrum and shortened its chord.

Dr. Goodell stated further that he used Hodge's or Davis's forceps, according to the high or low position of the head, and applied them early in order both to save the woman from prolonged suffering, and to avoid any swelling of the mother's and child's soft parts. That, as a rule, he waited for the os to dilate or to become dilatable, but he often applied them as a dilating wedge to a rigid os. Whenever the waters had drained off early, and the head did not bear firmly upon the cervix, he rarely waited for the os to expand, but dilated it with the forceps and enclosed head. That the forceps could generally be resorted to at an earlier stage of labor than version, for it could usually be applied whenever the os would admit the cone only of the fingers. That a few days ago he had been called in to a case of eclampsia, in which delivery was urgent. For some unexplainable reason the dilating bags kept slipping out, and, the child being dead, he had perforated its head and delivered it by the forceps through an extremely rigid os, into

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which neither he nor the attending physician could squeeze in four fingers. That the secret of getting in the forceps through such small openings is, to push the first blade so high up that it shall be wholly lost upon the head, and then, the os being now occupied by the slender shank alone, there is just room enough left to coax in, by a gentle see-saw movement, the second blade. The first blade is then to be pulled down into position before locking is attempted.

Dr. Goodell remarked, finally, that in timid women he often used the vectis, because it could be slipped on without their knowledge. He passed it in, on such occasions, usually over the sacral side of the occiput, and tried to apply it so as to admit the occipital protuberance in its fenestra. That he aimed to use it as a hook upon the base of the occiput, viz., as a tractor; but that, to maintain its hold, a certain amount of lateral pressure upon the child's head is necessary, which partly converts its action into that of a lever of the third kind. That in mento- and occipito-posterior positions, and also in cases of imperfect flexion and tardy extension, he could highly recommend this much-neglected instrument, when so applied as to meet the indication. That he had very recently been trying the following method of Prof. Fabbri, of Bologna, in transverse cranial positions at the brim, and had been pleased with the result: The vectis, passed over the pubic side of the mastoid region, is at first used as a lever of the first class; the left hand, at rest, representing the fulcrum, and the right hand becoming the power by raising the handle—in other words, each hand acts in opposite directions. When the handle is raised high enough to secure a firm hold, the right hand must be kept at rest, to become the fulcrum of a lever of the third class, while the left acts as the power. This compound action compresses the head in its biparietal diameter, and causes it to revolve around the promontory of the sacrum as the centre of motion, and to roll over into the pelvic cavity.

Dr. G. then exhibited the vectis which he himself used, and said that it could be procured from Mr. Gemrig, who had made a faithful copy of it. It had a sharp curve, an honest wooden handle, in place of the ambitious pessary-fenestra usually found in the American vectis, and, by a joint in the shank, could be folded up into a very small compass. Having stumbled upon it in the East, he did not know the inventor, but believed him to be Dr. Copeman, of Norwich, England.

To a question of Dr. Jenks, Dr. Goodell replied that he never hesitated to apply the forceps to the so-called "movable head," although it was necessarily above the superior strait.

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In doing this, however, sometimes the lock disappeared within the vulva, and there was no certainty of catching the head laterally if it was very movable. If deemed necessary, after the fixation of the head, the forceps could be reapplied.

Dr. Jenks called attention to the fact that the use of an instrument constructed on the same principle as Simpson's or Naegele's was co-extensive with the field of the application of the forceps to the sides of the pelvis. The fact that the distance between the blades when locked is three inches shows that it is not intended to act to any great extent as a compressor, except in so far as this is necessary in order to enable the instrument to obtain a firm grasp on the head, which is, however, mainly effected by the close correspondence of the cephalic curve to the head-globe. It is retained in position, and pressure is effected by the bony pelvis and the soft parts of the mother, hence a relation always exists between the amount of pressure and the degree of contraction. By this means, also, pressure is exerted on every point in the circumference of the head, being greatest, of course, in that diameter which must be moulded to fit the contracted diameter of the pelvis, and not, as is the case with instruments which act as powerful compressors, mainly at the points of contact of the blades with the cephalic globe. The yielding bones of the head, when subjected to this combined pressure at the pelvic inlet where contraction usually occurs, can be moulded to an extent which would prove fatal to the child, were this effected by traction and local pressure by means of the forceps often employed, as the indentations in the parietal bones in cases of contracted pelvis when delivery has been effected without instrumental aid, after powerful and long-continued uterine efforts, prove.

The great advantage which results from the use of an instrument intended only to supplement a deficient *vis a tergo* is that the mechanism of labor can, and does in most cases, when the contraction is not too great, proceed undisturbed, the head rotating anteriorly inside the blades. In these cases, when this rotation does not take place, we only imitate nature, for, in cases of contracted pelves, when the maternal efforts are finally sufficient to effect delivery, we find that this rotation of the head does not occur until late in the process of mechanism.

The fact of rotation of the head occurring within the blades cannot admit of any question. Any one who has used an instrument where powerful compression is not exerted has had repeated opportunities of verifying the fact. The testimony of Braun, Hohl, Scanzoni, Schröder, and others is full and decisive on this point. That this rotation does really take place,

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and that the operator is not deceived by having, in fact, applied the instruments primarily on the sides of the head, is proved by the marks of the blades over the brow and behind the ear, these marks showing the application of the instrument in the fronto-mastoid diameter at the superior strait, when the want of relation between the head and pelvis was sufficient to cause the close adaptation of the blades to the head, and their pressure into the soft tissues of the scalp, while the position of the blades on the sides of the head in its passage through the vulvar outlet leaves the fact of rotation beyond doubt.

The possibility of the application of the instrument on the sides of a movable head, when the sagittal suture occupies the transverse diameter, has been questioned by many and denied by not a few prominent obstetricians. Schröder, in the last edition of his text-book, writes: "If the head presents with the sagittal suture approximating the transverse diameter, the blades of the instrument must lie in the antero-posterior diameter of the pelvis, in order to grasp the head in the biparietal diameter. But since they *cannot be applied in this way*, there is nothing left when the head presents transversely, but to apply them obliquely on the head." Prof. Elliot also states that "under these circumstances the head is always seized obliquely."

But not to multiply authorities, though this would be an easy task, and granting the possibility of applying the instrument in the biparietal diameter of the movable head, how is it with regard to the *expediency* of the use of the forceps under these circumstances? Schröder calls attention to the fact that so long ago as the time of the younger Stein the value of version to the feet in cases of moderate contraction of the pelvis was recognized, and his apothegm has been ofttimes quoted, viz., "The forceps and version are mutually exclusive, for, while version is practicable, the forceps are contraindicated, and, when the use of the forceps is justifiable, the time for the execution of version has passed." In our own time the value of version in cases of moderate contraction, or when rapid delivery is advisable on account of the mother or child, is generally recognized. No special question in obstetrics has been answered with more decided unanimity than this—witness the writings of Naegele, Hohl, Scanzoni, Braun, Hacker, Martin, Simpson, Barnes, Braxton Hicks, and others.

If the difficulties in the application of the instrument to the sides of the movable head, and its subsequent delivery, are such, then, as to lead to the general substitution of another operation, how much more serious and difficult is its applica-

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tion when some time has passed since the commencement of labor, and the uterine pains have driven the head into the contracted brim as far as possible, so that it is nipped between the projecting promontory of the sacrum and the symphysis pubis! Nothing remains but the application of the instrument to the sides of the pelvis, and this condition it is which leads to the common testimony of those who hold that the forceps *should* be applied to the sides of the child's head, but admit that they are often disappointed in their efforts, and that the rule should not be held as an absolute one. And yet it is this very condition which in a large majority of cases justifies the use of the forceps, viz., slight contraction due either to rachitic deformity, or, what is very much more common, simple antero-posterior contraction of the pelvis, with no change in the contour or curvature of the sacrum, a condition so admirably described by Michaelis, and later by Schröder. In these cases the blades will grasp the head in spite of any efforts to the contrary in the oblique or fronto-mastoid diameter; in other words, they are applied to the sides of the pelvis, for this term "sides of the pelvis" must not, as is often the case, be taken to represent mathematically the terminations of the transverse diameter, but the space between the ileo-pectineal eminence and the sacro-iliac synchondrosis. It would be well if the term "sides of the pelvis" should be abandoned, and the relation of the instrument to the oblique diameter of the head substituted. The application of the instrument in these cases is not, then, a matter of election, but of necessity. The use of the forceps when the head has already passed into the cavity, or is engaged at the outlet, presents but one point of interest—viz., in occipito-posterior positions. It is strange that a premature interference with the mechanism of labor still characterizes the practice of this country. Capuron stated dogmatically that nature never could complete the labor under these circumstances, and hence, as soon as this position is recognized, it must be rectified, while Dr. Dewees condemned as "unfit to practise obstetrics the man who could not detect and change this position of the head." In point of fact, we find, however, that here, as in so many other instances, a mistrust of the powers of nature has led to a wrong conclusion, for, in the vast majority of cases (96+ pr. ct., Simpson) spontaneous rotation of the occiput anteriorly takes place, when the wanting factor in the problem—viz., the resistance furnished by the perinæum—is supplied. The rotation, then, which the operator fancies is due to his efforts would in the great majority of cases have occurred if the case had been left to nature,

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or at most if merely traction efforts had been exerted in order to bring the head on the perinæum; indeed, we not unfrequently find expressions of wonder at the ease and rapidity with which this rotation takes place after the deficient expulsive force has been supplemented by the forceps, the rotation being due to simple mechanical relations of the head to the posterior pelvic wall and its continuation, and not to the efforts of the operator to force a rectification of position. Nor is this forced rotation of the occiput forwards without danger; for, if the shoulders do not follow the movements of the head, serious injury to the child will result. In these cases, we have simply to *allow* rotation to take place anteriorly, if, as is usually the case, such is the leading tendency of the head. If, however, as exceptionally happens, the occiput rotates into the hollow of the sacrum, the difficulties of delivery with the forceps are not so great as usually stated in the text-books, as Braun, Barnes, and others have shown.

It has been urged that after all there is no great difference between the application of the instrument in the antero-posterior at the superior strait, and in the oblique diameter, if rotation of the head does not occur within the blades. In reply to this argument, attention need only be called to the fact that in the first case the instrument passes from the superior strait to the outlet, with its pelvic curve at first opposed to the sides of the pelvis, and only gradually approaching correspondence with the pelvic canal, a rotation of a quarter of a circle being necessary, while in the second mode of application the pelvic curve of the instrument approximately corresponds to the pelvic curve of the mother at the brim where contraction usually exists, and only passes through the outlet where there is no difficulty with a want of correspondence.

With regard to the alleged injuries to the child, it may be said that they do not follow the application of the forceps to the oblique diameter of the child's head more frequently than the other methods of application, unless a powerfully compressing instrument is applied in the oblique diameter, when it can readily be understood that serious results must ensue.

Nor should all cases of injury to the child's head be referred to the forceps alone. Cases of facial paralysis and fractures of the bones are reported where no instrument had been employed in cases of contracted pelvis. The existence of these and similar injuries in cases where nature unassisted effected the delivery, after long-continued and powerful efforts, should lead us to hesitate in ascribing them all to the use of the forceps. Their presence, when they do occur after an instru-

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ment which does not exert compression has been used, shows that the contraction at the superior strait was most serious, and in these cases the use of the forceps should be regarded as an *experimentum crucis* to see whether a subsequent operation for craniotomy can be evaded.

With regard to the preservation of the synclitism of the head, it may be questioned whether it can exist in even moderate contraction of the brim, the condition most usually demanding instrumental aid, for, on observing the mechanism of unassisted labor in these cases, we find the sagittal suture high up near the promontory, so that the planes of the head of the child can scarcely correspond to the pelvic planes. Did, however, such a relation exist, it can scarcely be influenced by the application of the forceps in the oblique diameter of the child's head; but by traction efforts exerted in a line at variance with the curve of the pelvic canal, a manipulation which is necessary in these very cases in order to lead the head into the pelvis in "the curve of the false promontory," as Barnes terms it.

Dr. Jenks further stated that he had repeatedly spoken of slight contractions of the pelvis as necessitating the use of the forceps; and so in fact they do, the proximate cause which leads to the application of the instrument is, however, often alone recognized by the practitioner. Since the publication of the admirable work of Michaelis on "The Contracted Pelvis," attention has been more and more directed to the fact that in a vast number of cases it is the existence of contraction, more or less marked, which produces disturbances in the normal mechanism of labor, finding their expression in irregularities of presentation and position, delayed dilatation of the os, and rupture of the membranes, prolapse of the cord, wedging and serous infiltration of the anterior lip of the uterus, arrest of the occiput in descent, and secondary uterine inertia. All these conditions are usually due to more or less contraction in the antero-posterior diameter of the brim, and their existence should always suggest a careful exploration of the diameters of the pelvis.

Dr. A. H. Smith believed that the forceps are as valuable as compressors as tractors. He thought that compression is as necessary as traction. He endorsed Dr. Wm. Goodell's remarks in full, and asked why the forceps, if not intended for the sides of the head, are not made with different sized blades, and with different length of handles. He had seen many cases where a slight deviation in the position of the forceps had caused paralysis of the facial nerve.

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STATED MEETING, JAN. 2, 1873. DR. WM. GOODELL, PRESIDENT, IN THE CHAIR.

DR. WM. G. PORTER exhibited an aborted ovum. Menstruation had continued after conception, and the embryo was expelled immediately after the second menstruation.

DR. W. F. JENKS exhibited an ovum expelled in the 4th month of gestation. It presented the peculiarity of apparently having no placenta, although he supposed that the placenta was expelled afterwards while the woman was at stool, but was not closely looked for by the medical attendant. The cord protruded through the unruptured membranes about one inch, and terminated in a pointed extremity. The membranes were smooth and did not present any evidence of having been attached to a placenta.

DR. J. V. INGHAM presented a specimen of large fibroid tumor of the right ovary, with the following history:

T. P., married; aged 29; the mother of five children. The last two were born at the 7th month. Up to the birth of the last child, 5 years ago, she was in comparatively good health, but from that time her health failed. Nothing definite, however (owing to a very feeble intellect), could be learned concerning her condition, except that she was miserable and had abdominal pains. Two years ago she had some fresh pelvic trouble, but could only say that she suffered great pain. This never entirely left her. At this time the menses disappeared and never returned. Last July she first noticed a tumor, about the size of an orange, appearing above the pubis; it was movable but not very painful. This she insists entirely disappeared, and with its disappearance her abdomen rapidly enlarged. On the first of November, 1873, she was admitted to the medical wards of the Philadelphia Hospital for ascites, and 10 days later she was tapped, and 14 quarts of a clear pale straw-colored fluid were evacuated. After the operation the existence of a large pelvic tumor was recognized, and she was transferred to the ward for the Diseases of Women and came under the care of Dr. Ingham. After obtaining the above very imperfect history, he made a careful examination and found a hard non-fluctuating and immovable tumor reaching about three inches above the pubes in the median line. It occupied the entire right upper part of the pelvic cavity, and extended far into the left side. The uterus was apparently situated anteriorly to the tumor, but as every attempt to pass the sound gave much pain (it was not deemed advisable to administer an anæsthetic), this could not be positively determined, nor could the cavity of the uterus be

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measured. The abdomen rapidly filled up with fluid, and two weeks after the first tapping she was again tapped and 10 quarts of fluid obtained. It was like the first, clear, of a pale straw color, was alkaline, had a sp. g. of 1016. and became almost solid with albumen when tested by heat and nitric acid, but when allowed to stand for 24 hours there was no precipitate. Twelve days later tapping was again resorted to, but only as a palliative measure, for she was rapidly sinking from dyspnœa and exhaustion. This time 12 quarts were drawn off. After the operation the dyspnœa was relieved and she rallied for a few hours, but soon relapsed, and died four days later with many symptoms of peritonitis.

On opening the abdomen the intestines were covered with a recent exudation of lymph, and were displaced by the tumor, which extended about four inches above the superior strait. The heart, liver, and kidneys had undergone extensive fatty degeneration. The pelvic tumor so closely occupied the superior strait that it was with great difficulty that a knife was passed far enough to extract the entire pelvic organs. The uterus was healthy and of a normal size. The left ovary was the seat of a small cyst about the size of a marble. The right ovary had disappeared, and its place was occupied by a fibroid tumor, slightly larger than a fœtal head at term. This tumor did not involve the walls of the uterus, but was connected to it so closely by firm adhesions that at first sight it was difficult to decide whether it was ovarian or uterine in its origin. A closer examination, however, revealed the fact that it was ovarian.

The specimen was then exhibited, after which Dr. Ingham spoke of the great difficulty in making a diagnosis of such tumors. Even had the sound been passed, and the cavity of the uterus measured, the close connection between the tumor and the uterus would have rendered such examination of but little value, as any movement of the sound would have been communicated to the tumor, and *vice versâ*. He did not believe that the presence of the tumor had caused her death, but that she had died from the extensive fatty degeneration that existed in the other organs.

Dr. J. L. Ludlow spoke highly of the value of tapping in these cases, although he fully recognized the fact that it was only a palliative measure.

Dr. Duer, who had seen the patient with Dr. Ingham, spoke of the uselessness of the sound in these cases, and the utter impossibility of making a diagnosis either with or without it.

Dr. W. F. Jenks then exhibited a specimen of fibroma of the corpus luteum. The tumor was about the size of a cherry,

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projecting from the surface of the ovary, of a pale yellowish tint, somewhat nodulated, elastic, and enclosed in a distinct capsule. On section a small central cavity was found, surrounded by a dense white fibrous tissue, thrown into folds or wrinkles, in the immediate periphery of the central cavity. In one circumscribed spot this fibrous layer had undergone calcification. On microscopical examination it was found to consist of delicate thin connective tissue-cells closely packed together, interspersed towards the centre of the growth with hæmatin and hæmatoidine crystals. Two growths of this sort are described by Rokitansky, and one by Klob, but in all of the cases the tumor was larger than the one under consideration.

The President, Dr. Wm. Goodell, then delivered his annual address,* after which the Society elected the following officers for 1873: *President*, Dr. Wm. Goodell; *Vice-Presidents*, Drs. J. L. Ludlow and J. S. Parry; *Secretary*, Dr. J. V. Ingham; *Treasurer*, Dr. D. Murray Cheston; *Curator*, Dr. W. F. Jenks; *Council*, Drs. A. H. Smith, L. D. Harlow, R. P. Harris and J. F. Wilson; *Publication Committee*, Drs. Wm. Goodell, W. F. Jenks, J. H. Packard and R. G. Curtin.

Stated Meeting, Feb. 6, 1873. Dr. Wm. Goodell, President, in the Chair.

Dr. C. A. McCall exhibited a blighted ovum, apparently in the 3d month, and stated that on the evening of the 14th of January, 1873, he was called to see Mrs. R., and found her in labor, in which condition she had been for 16 hours. The child was presenting by the feet. With some difficulty a medium sized female child was delivered; it was asphyxiated, but, after working with it for half an hour, it breathed. On removing the placenta and membranes the accompanying specimen came with them. It is apparently another fœtus, about three months old and flattened by pressure. The mother had been in excellent health during her pregnancy, and was unconscious of anything unusual having occurred during that time to which the death of this embryo can be attributed. She had never carried a child to term before, having had two miscarriages—one at 6 months, the other at 3 months.

Dr. J. V. Ingham stated that, through the kindness of Dr. McCall, he had had an opportunity of making a careful examination of this very interesting specimen. It was undoubtedly

* See page 1.

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a flattened fœtus, as the outlines of the face and body were distinctly visible; it was also easy to trace out both arms and hands, and the legs as far as the knees. He had taken the liberty of announcing it, in the notices of the meeting, as the product of a twin conception, although Dr. J. Matthews Duncan, of Edinburgh, asserts that up to the 3d month superfœtation can occur, for before that time the membrana decidua reflexa and the membrana decidua vera are not in close contact, and the passage of either an ovule or a spermatozoon is a possibility.

He (Dr. Ingham) believed that in this case the life of the embryo had been destroyed, perhaps, as is stated by Sir J. T. Simpson, by a deficiency of the liquor amnii, and it had been retained until term.

Dr. A. H. Smith believed that it was the product of a twin conception. He had seen several cases in which the development of one fœtus had been arrested generally by hemorrhage, the other going on to full development, the two being expelled together.

Dr. I. L. Ludlow had also seen a similar case, in which a five weeks' embryo had been expelled at term with a fully developed child.

Dr. Goodell asked Dr. Smith whether the twins in each of his two cases were of the same sex?

Dr. Smith replied that he believed that the twins in both cases were of the same sex.

Dr. Goodell remarked that he had asked this question, because Hyrtl had discovered a vascular communication between the placentæ of twins of the same sex, but none between those of different sexes; that this anastomosis holds good also in triplets of the same sex. If, however, one of these is of a different sex from its fellows, its placental vessels will be independent, while those of the other two will anastomose. It had struck him (Dr. G.) that possibly in these cases of fœtus papyraceus, the retention of the blighted ovum might he explained on the supposition that the twins were of the same sex, and that, therefore, a supply of blood reached the placenta of the dead fœtus just enough to prevent decomposition, but not enough to prevent mummification. He further remarked that in that classical work on forensic medicine by Caspar, the author, as it seemed to him, had hit upon the true explanation of those stock cases in obstetrical literature of fully developed and living children born the one, three, or four months after the other. Caspar contends that these were not cases of superfœtation but of fraud. For, in none of these instances were both children delivered by the reporting physician; but the birth of the first child was only

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alleged by the mother. It was, therefore, reasonable to suppose that either a designing woman, or one ashamed of her sterility, had, during a feigned pregnancy, unwittingly become pregnant, and had, therefore, been really delivered a few months after the simulated birth of the spurious infant.

On motion of Dr. Jenks this specimen was referred to a committee of three, consisting of Drs. Jenks, McCall and Ingham, to examine carefully and report at the next meeting.

Dr. W. F. Jenks than exhibited specimens of tubercular degeneration of the mucous membrane of the uterus, of sub-peritoneal fibroid of the uterus, and one of dropsy of the Fallopian tubes.

He called attention to the condition in the latter specimen which must prove, whenever it occurs, a complete bar to sterility, viz., the obstruction of the Fallopian tubes, and stated that he believed a milder form, originating in catarrh of the tubes, to be a common cause of sterility.

Dr. J. L. Ludlow stated that it is a well known fact that prostitutes seldom become pregnant. Is not their sterility owing to catarrh of the tubes, resulting from continual sexual excitement?

Dr. J. S. Parry said that pelvic peritonitis was very common in prostitutes, but believed it was not owing so much to sexual excitement as to the diseases incident to their calling.

Dr. W. H. Jenks called attention to the uselessness of attempting to treat sterility when due to this cause. He had seen Dr. Duncan pass the uterine sound into the Fallopian tubes, at least it had disappeared several inches in that direction.

The Secretary then read the following paper, from Dr. Hugh L. Hodge, in answer to a circular addressed to the profession, for the purpose of collecting statistics on cases of craniotomy. This paper possesses additional interest, from the fact that it was written by Dr. Hodge but a short time before his death:

Gentlemen: I have received your circular of the 10th of October, indicating a desire to collect statistics as to craniotomy cases where the conjugate diameter did not exceed 2½ inches. I am not able to further your object in this point, as, in a practice of more than fifty years, deformities to this extent have not occurred to me.

The only case with which I have been connected is that of Mrs. R., the details of which are well known to the profession, as they have been published in the journals, and more minutely by Prof. Gibson in his work on Surgery; by Dr. Meigs and myself in our respective works on Obstetrics.

At present I may say that the conjugate diameter of Mrs. R.'s pelvis was estimated at two inches, and that her physicians,

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Drs. Geo. Fox and Chas. Meigs, proposed the Cæsarean section, but after a consultation with Profs. James and Dewees, and also with Dr. Physick, craniotomy was determined on in accordance with the wishes of the patient. Delivery was effected by Dr. Meigs, by perforation and the use of the crotchet and craniotomy forceps, with safety to the mother. She again became pregnant, and was again safely delivered by Dr. Meigs after perforation by his craniotomy forceps. When pregnant a third time she consulted Drs. Beatty and Nancrede, who, insisting upon the propriety of hysterotomy, Prof. Gibson skilfully executed it with the most favorable results. The mother recovered without difficulty, and the child, a girl, survived. In her fourth delivery Drs. Fox and Meigs were again consulted, and Dr. Gibson operated. The success was perfect, a male child being preserved. I have since very frequently heard of this family. The mother is, I believe, still living, the children have been healthy, have been married and become parents. Mrs. R. was said to have been the subject of rickets in early life.

As regards your 7th question I have no experience with the cranioclast. It is an instrument similar to the osteotomist of Dr. Davis, and over which it has several advantages. As recommended by Sir Jas. Y. Simpson, its operation consisted not only in breaking up the cranium, but also as a tractor. In this point of view its "modus operandi" was similar to that of the crotchet, craniotomy forceps, etc.; by each one the head, more or less diminished in size, was forcibly dragged through the contracted pelvic passages. Hence all further compression was effected, not by the instruments employed, but by the walls of the pelvis; the lamentable consequences of compression thus made are well known. Wounds, lacerations, contusions of uterus, vagina and bladder and other tissues, followed by bloody infiltrations, inflammation, abscesses, gangrene, etc., too often with a fatal result, constitute the real dangers of craniotomy; hence the important principle of directly and efficiently compressing the cranium is one of the great improvements of modern obstetric science. The risk of injury to the mother's tissues being inversely to the degree of compression, the greater the diminution of the head the less pressure upon the walls of the pelvis. We ought, therefore, to be grateful to M. Baudelocque neveu, for first effectually carrying out this principle by means of his "brisé tête," or cephalotribe, as described by him in 1832. In this country I had operated upon the same principle by means of the forceps, by which, after perforating the cranium, I reduced its transverse diameter to 2½ inches, and thus

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effected delivery in pelves moderately contracted. In 1843 my instrument-maker, Mr. Rorer, manufactured a cephalotribe (compressor cranii) under my directions. No bad consequences even of a minor degree ever resulted in any of my cases.

Perhaps I may, on some future occasion, present to your Society a few observations on the great value of cephalotripsy, and upon that form of the cephalotribe which would render it most useful as a compressor, and also as a tractor.

Respectfully yours,

HUGH L. HODGE,
901 Walnut St.

Nov. 6th, 1872.
To the Phila. Obstetrical Society.

THE HISTORIES OF THREE CASES OF RUPTURE OF THE UTERUS.*

BY JOHN S. PARRY, M.D.,
Attending Accoucheur to the Philadelphia Hospital, Vice-President of the Obstetrical Society of Philadelphia, etc., etc.

RUPTURE of the uterus is one of the gravest accidents which can occur during the progress of a labor. A sufficient number of cases are already upon record to warrant us in concluding that the clinical history of the lesion has been well studied and its causes fully appreciated. If, however, any one who has met with several examples of this accident recalls his own experience, he will probably conclude that it is very liable to escape detection until revealed on the post-mortem table. The records of numerous cases teach us that, notwithstanding the gravity of the lesion, the peculiar symptoms of rupture of the uterus may be absent. In one of the patients whose histories are put upon

* *Read April 3d*, 1873.

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record to-night, all of the typical phenomena of the condition were absent, while in another instance unusual, and, so far as the writer is aware, unique and previously undescribed, symptoms presented themselves.

CASE I.—*Rachitic Dwarf. Rupture of Uterus from Neglect.*

Mrs. E., aged 23, an American, fell into labor at about full term, March 19th, under the care of an intelligent but inexperienced obstetrician. She was a dwarf, being only 48 inches high, and had probably been rachitic in infancy. Her labor-pains set in during the night of March 19th, and continued during the 20th and 21st. They were slight during this period, and the head of the child could be felt presenting. About 2½ P.M., on the 21st, they became "frequent and hard." Her physician was recalled immediately and reached her about 15 minutes afterward, when her pains had ceased. He could just reach the head of the child, and the os was "tolerably well" dilated. The woman said that she felt very badly, and she was uneasy. Her skin was moist and she was very pale, while the vagina and perinæum were moist and relaxed. At 4¼ P.M. pelvic deformity, and decided contraction of the antero-posterior diameter, were diagnosed. She still had no pain. The head was felt above the promontory, and more blood than usual was issuing from the vagina. At 7 P.M. she was seen by Dr. J., who could not feel the head above the promontory. The bleeding was more profuse. An hour later the loss of blood was decided and increasing. The head could just be felt within the os. The antero-

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posterior diameter of the pelvis was measured, and decided not to exceed 2½ inches. The os and cervix uteri were flabby, and clots of blood could be felt before reaching the head. Uterine contractions were still absent; the patient complained of feeling badly, and of pains in the lower part of the abdomen. Her face was pinched and her pulse rapid and weak.

A diagnosis of internal hemorrhage was made. Ergot and stimulants were directed, while the vagina was tamponed.

At 9½ P.M. she was much worse, though there had been but little external bleeding after the introduction of the tampon. The forceps could not be applied, and owing to the extremity of the woman's condition it was decided that she could not survive the operation of craniotomy. She died collapsed an hour and a quarter later.

Autopsy.—Upon opening the cavity of the abdomen, the child, placenta, and several clots were found in it. The anterior wall of the uterus was torn just above the bladder. The walls of the organ in the vicinity of the rupture were exceedingly thin, while the fundus was thick, hard, and contained some clots. The os and points immediately above it were filled with coagulated blood.

The following were the diameters of the pelvis:—

Antero-posterior, 2¼ inches; transverse, 4½ inches; oblique, 4¼ inches. The height of the woman was only four feet.

The child was of average size. The cervico-bregmatic and bi-parietal diameters of the dried head meas-

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ured nearly 3½ inches, while the occipito-frontal was 4⅛ and the occipito-mental 4½ inches.

Remarks.—This history is exceedingly instructive. Rupture of the uterus was not diagnosticated, and, it seems, hardly suspected until the woman had perished. The gentlemen in attendance fully appreciated the grave symptoms which manifested themselves, and they concluded that another serious accident of the lying-in room, concealed hemorrhage, had set in. They likewise fully recognized the gravity of the pelvic deformity, but were thrown off their guard by the absence of severe labor-pains, which was noticed during the whole of the parturient process. The patient made but little complaint about her "pains" until the afternoon of Tuesday, and even then they ceased before her physician reached her, though he was at her bedside within twenty minutes after he was called. It is probable that the laceration occurred at this time. It seems that but one characteristic symptom of rupture of the uterus was present in this case; this was recession of the child's head from the brim of the pelvis. Upon the value of this it is not necessary to insist, since it is well recognized.

CASE II.—*Difficult Labor. Failure to Deliver by Forceps or Version. Craniotomy. Rupture of the Uterus. Recovery.*

Mrs. G., aged 27—a primapara—seen in consultation with the late Dr. Mustin at 7 P.M., on Tuesday evening. Labor had commenced on the previous Sunday morning. The pains had continued strong during all that day and the succeeding night. The waters

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were discharged at 4 A.M. on Monday. During the day and succeeding night she suffered much, but called in no physician until Tuesday morning, when she summoned Dr. Mustin, who found the pains strong, the os dilated, the vagina cool and moist. The head, which was a large one, was presenting at the superior strait in the right occipito-posterior position. It was partially extended so that the occipito-frontal diameter was in the oblique diameter of the pelvis. There was no advance during the day, and the following was her condition at my visit. Her pains were very strong, pulse good, tongue clean, *morale* excellent, the vagina hot and dry, the discharges brown and rather offensive. There was a large caput-succedaneum; the head of the child had not left the uterus, and was forced down into the superior strait.

Attempts to secure flexion failed. Ether was administered, and Simpson's forceps were applied with great difficulty. Strong traction was made until 11 o'clock, but without producing the least effect. At this time a fissure a little over an inch long was discovered in the posterior lip of the uterus. It did not extend through the tissue of the organ, and reached down to, but did not involve, the vagina.

The forceps were removed, and a cautious attempt was made to turn, but was soon abandoned. The uterus was so firmly contracted that there was no hope that it could be done without rupturing the organ.

A large dose of morphia with stimulants was now administered, and attempts at delivery suspended until 3 A.M. on Wednesday morning, when Dr. Wallace's

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forceps were applied and traction made during the succeeding four hours without any result. It was now determined to resort to craniotomy, and fifty-two hours after the rupture of the membranes the operation was commenced. Delivery was effected three hours later, after the most violent efforts. The pelvis was but slightly contracted, the difficulty being in a great measure due to the large size of the child's head and its firm ossification. Immediately after the labor was completed, a rupture of the uterus was discovered. It involved the posterior surface of the organ, and was nearly five inches long. The cavity of the uterus communicated with that of the peritonæum by an aperture at least two inches and a half long. The fingers were thrust through this into the cavity of the peritonæum, and the intestines were distinctly felt rolling and contracting beneath them. The margins of the rupture were quite regular, and to a certain degree conveyed the idea of a clean incised wound. The placenta separated readily. There was but little hemorrhage. The woman was replaced in bed very much exhausted. Large doses of opium were prescribed, and her friends informed that we had no hope of her recovery.

The writer saw her but once afterward, when Dr. Mustin could not be found. She was then suffering from general peritonitis, which was extremely severe; but, notwithstanding this, she fully recovered, and it is said upon good authority that she has since given birth to a living child without difficulty.

Remarks.—The rupture of the uterus in this case was unattended by the usual pain and profound shock,

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for the simple reason that it occurred while the patient was under the influence of ether. This was administered when the forceps were first applied, shortly after 7 P.M. After the detection of the fissure in the cervix, the contractions of the uterus were in a great measure suspended, but actual rupture was not suspected at the time. The morphia was given to prevent uterine contraction as much as possible until craniotomy instruments could be procured. The laceration in this case has always struck us as being somewhat peculiar, in the fact that it presented so many of the characters of an incised wound. There was no hemorrhage from the vagina, nor did the head recede.

The injury was not caused by the forceps, since the blades of the instruments, though introduced into the cavity of the uterus, did not come in contact with that portion of the organ which was torn.

The patient took no ergot after she was seen by Dr. Mustin. The midwife denied that she had given her any before his arrival.

CASE III.—*Disproportion between the Size of the Pelvis and Child's Head. Left occipito-posterior position. Rupture of the Uterus. Delivery by the Forceps. Death.*

M. S., a primapara, aged 22 years, fell into labor in the Philadelphia Hospital, March 29th, 1873. She was under the care of Dr. Edward Stone, resident accoucheur, to whom I am indebted for the following history. Dr. Stone was summoned at 9.30 P.M., when he learned that she had suffered from labor-pains during

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the entire day, and that the bag of waters had already ruptured, though the girl, who was rather feeble-minded, could not tell when this had occurred. The abdomen was unusually prominent, and on palpation Dr. Stone distinctly detected the outline of the fœtus through the abdominal and uterine walls. The head was presenting with the occiput to the left sacro-iliac synchondrosis. The fœtal heart was heard to the left of the median line of the mother, and was not very distinct. The os uteri was about one inch and a half in diameter, and dilatable; the head entirely above the superior strait. No contraction of the brim was detected: the mother's condition was good, and her pains were tolerably strong and frequent.

At 11 P.M. the dilation of the os was nearly complete, and strong expulsive pains had set in, during which the uterine tumor was more prominent than is usual. The patient had no desire to bear down, nor was she urged to do so.

At 5 A.M., on the 20th, the head had entered the pelvis. It was somewhat compressed, the cranial bones overlapped one another, and there was a large caput over the vertex. The mother's condition was good, although she complained of being tired.

At 7 A.M. she was vomiting profusely. The ejected matters were dark-colored, and had the appearance of coffee-grounds. Her face was pale, hands cool, pulse 160 per minute and feeble. She was drowsy, but did not complain of pain, and was satisfied with relief from suffering; but the uterus continued to contract at intervals of ten minutes, though quite feebly. The

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vomiting continued during the morning, and at 9 A.M. her tongue was dry and brown, and her belly tender, with a fluctuating tumor over the uterus, between the umbilicus and pubis. There was no hemorrhage. Dr. Stone sent for me early in the morning, but through an error the message did not reach me until 2 P.M.

At 3 P.M. she was still vomiting occasionally. Her abdomen was quite tender, the uterine contractions very feeble and occurring at longer intervals. Ether was now administered and partial anæsthesia produced. At this time the fœtal heart was inaudible. The fluctuation above the pubis had increased. A catheter was passed, but no urine was obtained, and the supra-pubic tumor was not changed. Simpson's forceps were applied to the sides of the pelvis, without regard to the position of the child. The head, which was in the cavity of the pelvis, had rotated and become directly transverse. Some force was necessary to start it, when it rotated to the first position; after which the forceps were removed, reapplied to the sides of the head, and delivery effected.

The child was still-born and weighed 8½ pounds. The head was considerably elongated by pressure. The bi-parietal and occipito-bregmatic diameters were each 4 inches, the occipito-mental 7½, and the occipito-frontal 6 inches. On the left side of the head and just in front of the ear was a groove, which was probably produced by the sacral promontory.

Ergot was administered immediately after the birth of the child *for the first time.* The placenta was expressed by Crede's method, without more than the ordinary loss of blood.

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The vomiting ceased after delivery, but in a short time the abdomen became very tympanitic, but the tenderness disappeared. During the night she had slight hemorrhage, sufficient to stain five or six napkins, became exceedingly restless, and died at 5 A.M. on the 21st.

Autopsy.—Five hours after death.

Face, lips, and posterior portion of trunk are livid. A dark thin fluid which resembles coffee-grounds flows from the mouth. She was 59⅛ inches high.

Abdomen.—Parietal and visceral layers of the peritonæum are deeply injected and of a brilliant red color. There was a little recent lymph upon the membrane.

The bladder was empty, strongly contracted, walls thick and dense. The mucous membrane was injected, especially over the posterior surface of the organ. Near the middle of the posterior wall, blood had been effused into and beneath the mucous membrane over a space nearly an inch in diameter. The mucous membrane at the fundus was thickened and œdematous.

Uterus.—Before the removal of the womb fluctuation was detected in the utero-vesical peritonæal pouch. From thence it extended upward for three and a half inches. It was perceptible over the whole of the left side of the uterus, but extended little beyond the median line. The peritonæum covering this space was deeply injected, was detached from the surface of the uterus, and fluid blood could be seen beneath it. At the upper margin of the large fluctuating surface was a smaller one, two and three-quarter inches in diameter. The two cavities communicated by a canal, and the blood could easily be pressed from one to the other.

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Upon the left side of the uterus, in the left broad ligament, was a large fluctuating tumor which nearly filled that side of the pelvis. Its upper boundary was the superior margin of the broad ligament, and below, it reached a point opposite the os uteri. The contents of the pelvis were removed, with a considerable portion of the peritonæum, by cutting close to the pelvic walls.

The uterine cavity was nine inches long. Upon the left side of the organ, just above the attachment of the cervix and vagina, was a rupture five inches long. Through this the hand could be passed into a large cavity which was partially filled with coagulated blood. It was capable of holding nearly a quart of fluid, and was formed by the peritonæum, which was not torn, but which had been dissected up over the anterior surface of the uterus, as previously described, and over a portion of the posterior aspect of the organ.

The tissue of the broad ligament was largely destroyed. On the left the effused blood was almost in contact with the pelvic wall. Below, it did not extend beyond the point mentioned, though it involved a small portion of the sheath of the psoas muscle.

The rent was longitudinal. The edges were somewhat irregular, were of a deep-red color, and had the appearance of having been bruised. The external surface of the uterus was very dark and stained with blood. The placental attachment was near the fundus on the right and posterior surface. The uterine tissue presented no evidences of disease. It was examined with the microscope by Dr. Bertolet, who states that it was healthy.

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The right ovary was normal. The left was enlarged, and nearly black blood was effused into its substance.

The brim of the pelvis measured four inches in the antero-posterior, and five and a half in the transverse, diameter.

The other organs of the body were healthy.

There is one extremely interesting point in connection with this case. This is, the fact that a fluctuating tumor existed over the pubis before the death of the patient. So far as we know, this has never been noticed in connection with rupture of the uterus.

The occurrence of rupture without a rent in the peritonæum is likewise a fact worthy of note. A somewhat similar case has been recorded by Dr. Radford, of Manchester, in his able paper on lacerations of the uterus. (*Trans. Obstet. Soc.*, London, vol. viii., p. 187.) In this instance the rupture was upon the right side of the uterus, and the buttocks and body of the fœtus escaped through it, tearing up and separating the peritonæum without rupturing it, so that when Dr. Radford reached this patient, whom he found dead, he discovered two tumors in the abdominal cavity—one the large uterus, the other the body of the child covered by the peritonæum. Dr. Radford says: "The records of medical science furnish no case bearing the least analogy" to the one which he has described. The only difference between the history recorded by him and the one just related is, that in the latter the child did not escape through the rent. The separation of the peritonæum in this instance seems to have been due to the hemor-

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rhage, which slowly tore up the membrane until it produced the large cavity which has been described, and which was characterized by a supra-pubic tumor and fluctuation.

There are several points which are presented for consideration by the cases which have been related. In the first, through an error, the patient was allowed to perish without any attempt being made to effect a delivery. Undoubtedly the accident might have been prevented by a timely resort to craniotomy or the Cæsarean section, for no one could hope to deliver a living child through a conjugate of 2¼ inches. But this not having been done, the recedence of the head, combined with the profound collapse and hemorrhage, indicated the grave character of the accident,—and, looking back upon the case from our present standpoint, the indication is sufficiently clear. This was, to perform gastrotomy, and, removing the fœtus, secundines, and clots of blood from the abdominal cavity, to have afforded the unhappy patient the only chance that there was for her to recover. Dr. Trask, in his admirable monograph upon rupture of the uterus (*Amer. Jour. of Med. Sciences*, Jan. and April, 1848, and July, 1856), has, we think, shown conclusively that this would have been the proper method of treatment under the circumstances. Certainly no one would advocate at this day the doctrine of Hunter and Denman, that these cases should be abandoned to nature; but a larger number might probably be found who would attempt to relieve by introducing the hand, passing it through the rent in the uterus, seizing the feet, and

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attempting to extract. However successful this may be in pelves which are ample in size, the procedure would certainly add much to the dangers of the case when undertaken in a pelvis through which there is no hope of extracting an unmutilated fœtus, and in which the dangers of craniotomy are so great as to make it a terribly grave operation in uncomplicated cases.

In all of these patients the cause of the rupture was the same,—disproportion between the size of the child's head and the pelvic brim. Trask found this condition to be present in nearly one-fourth of all the cases which he has analyzed.

All the histories here related illustrate in a marked degree the influence of delay in delivery, or rather what Sir James Y. Simpson (*Obstet. Works*, 8vo, Phila.) called protraction of the labor in producing this accident. In the first patient, operative interference was clearly indicated, and should have been commenced as soon as the os uteri was dilated or dilatable. The patient lost nearly three days in fruitless efforts to relieve herself.

The history of the second patient is nearly analogous, and had she had timely assistance the terrible accident which so nearly destroyed her life might have been prevented, and her attendants might have been spared the dreadful alternative of plunging the perforator into the head of her living child. The third history is equally instructive, and as forcibly illustrates the danger of delay in assisting delivery. It is true that the whole duration of labor was not great, being but little over twenty-four hours; but the bag of waters ruptured

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early, and from eleven in the night until between five and seven o'clock the next morning the uterus continued to act, though not very violently, without materially advancing the labor. At this time the overworked organ could bear the strain no longer, and gave way. No better illustration of the dangers due to protraction of labor could be detailed; and it has forcibly recalled to the writer the fact that, a short time since, he publicly stated in this hall that if the second stage of labor should continue actively for more than two hours without any advance of the head, the propriety of aiding the patient should be seriously considered.

No one is more willing than the writer to admit that "meddlesome midwifery is bad." Year after year we have heard this maxim uttered in lecture and debate. We are told that in the vast majority of occipito-posterior positions the head will descend, rotate, and be delivered with the occiput under the pubic arch. Patience is the watchword of accoucheurs in the management of these positions, and they are told to sit supinely by their suffering patients, watching the throes of labor until the child's head has descended, rotated, and been born. That this will occur in a large majority of instances no man of any experience can have a shadow of doubt; but there are cases in which the delivery of a living child without injury to either the mother or her offspring is perfectly practicable, and in which, if left to nature, the result may be fatal to one or both. Judicious interference does not jeopardize either—nay, more: the skilful operator had better err in resorting to the forceps or version early than in postponing either operation too

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long. We do not hesitate to repeat, that we adhere to a rule adopted several years since, to gravely consider the propriety of interfering when the second stage of labor has continued two hours without any advance. Thus the fearful accident of uterine rupture is prevented—not treated—and the medical attendant avoids the disagreeable task of passing his hand through the laceration into the abdominal cavity to seize the child and drag it through the contracting wound, or of opening the belly and extracting it through the incision. Thus he becomes not the substitute for, but the handmaid and assistant of, nature. As such the intelligent physician goes to the bedside of his suffering patient, in the sore hour of her travail, with a full knowledge of the extent of his resources. Conscious of his powers and strong in their possession, he anticipates and prevents danger. "Meddlesome midwifery is bad!" Delay and timidity in operating are bad!

STATED MEETING, MARCH 6, 1873. DR. WM. GOODELL, PRESIDENT, IN THE CHAIR.

DR. W. F. JENKS exhibited an

UMBILICAL CORD TIED IN A SQUARE KNOT.

The fœtal heart-sounds were feeble, and were heard with difficulty upon the left side. The child was born at term, was small, about 3½ lbs., and the cord was wound twice around its neck, being also tied in the middle of its length in a square knot.

The interesting question arose, how far the feebleness of the fœtal heart-sounds depended upon the knot in the cord.

DR. WM. GOODELL had seen two knots in the same cord and thought that they were sometimes produced in the delivery of the child, by loops of the cord slipping down over the body from around the child's neck.

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Dr. Beecher exhibited

A LIVING CHILD WITH CONGENITAL DEFICIENCY OF THE LOWER EXTREMITIES BELOW THE KNEES.

The details of this case will be given in the report of the committee appointed to examine it.

Dr. Albert H. Smith had seen cases of spontaneous amputation of a limb, but this case at first sight appeared to be one of imperfect development.

Dr. J. V. Ingham referred to a condition of the right leg, which had been noticed by Sir Jas. Y. Simpson. This presented a small tubercle about the size of the last phalanx of the little finger; on the left leg there was a similar tubercle about the size of the last phalanx of the thumb. On these, however, there were no nails, as had been the case in some of the children referred to by Dr. J. Y. Simpson.

Dr. W. P. Taylor referred to a young lady, aged 17, whose right arm was congenitally deficient below the elbow; there was a perfect and useful finger on the stump; the left arm was perfect.

Dr. J. V. Ingham presented for Dr. Ludlow an

OVUM IN THE EIGHTH WEEK OF GESTATION.

The specimen was of great interest, as it clearly exhibited a patulous os uteri and Fallopian tubes. The decidua reflexa was not attached to the decidua vera but on one side, and there was a free passage from the vagina to the ovaries, and vice versâ. This supported the views advanced by Dr. J. M. Duncan, to the effect that up to the third month a second impregnation is possible.

Dr. Wm. F. Jenks then read the following report from the

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committee appointed at the last meeting to examine Dr. C. A. McCall's specimen of

BLIGHTED OVUM.

Your committee would report that the specimen of a "Blighted Ovum in a case of twin conception," submitted to them for examination, consists of a fœtus apparently about three months old, the body of which is flattened by compression in the antero-posterior diameter (the presenting surface in the accompanying drawing representing, therefore, the back of the child), while the head is twisted on the neck, so that the chin looks over the left shoulder, a profile view of the face being thus obtained. The left arm rests in close contact with the face, while the right, flexed on itself, is thrown across the chest. Anteriorly, the cord, thin and flattened like a piece of tape, can be traced with some difficulty from the umbilicus, over the left shoulder, closely encircling the neck, to a point where it becomes lost in the fragments of membrane and coagula which are attached to the specimen. The lower extremities converge and are deficient below the knee-joint; the appearance of a foot at the lower portion of the right limb is fallacious, being due to the flattened condyle of the femur.

A careful microscopical examination of the adherent membrane and shreds of tissue showed that the minute structure of the decidua could still be easily recognized, but no trace of the placental villi could be discovered, the appearance of placental tissue being due to the hardened coagula which were mechanically attached to the specimen. The fœtus is not at all decomposed, but has undergone the process of mummification, being converted thereby into the so-called "fœtus papyraceus." The examination of each tissue with the microscope showed that their individual histological characteristics were in some instances exquisitely preserved. The muscular tissue showed at once the disassociation of the fibrillæ, and the transverse striæ of the sarcous elements, while here and there brown pigmentary granules, probably derived from the coloring matter of the muscle, and cholesterin crystals were found.

The other tissues, so far as they were examined, presented all the changes, so well described by Cornil and Ranvier,* in recounting the pathology of this process of "mortification or death without putrefaction."

Among the questions which were suggested to your com-

* Manuel d'Histologie pathologique, Cornil and Ranvier, p. 39.

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mittee by an examination of this specimen, the following seemed to them to possess sufficient interest to justify a more detailed consideration :—

1. Can this be regarded as a case of superfœtation ?
2. What causes the death of the fœtus in utero at this early age ?
3. What are the conditions which lead to its expulsion or retention ?
4. What is the nature of this process of mummification ?
5. Is the health of the mother or of the remaining child affected by the retention of the mummified fœtus ?

In considering the possibility of superfœtation, your committee would call attention, in the analysis of the mass of cases grouped together under this term, to the necessity of a stricter principle of classification than is usually adopted, and would recommend the division suggested by Kussmaul, viz., superfecundation, to designate a subsequent impregnation during the first menstrual or ovular period, in a woman who has already conceived, while the term superfœtation is reserved for those cases where impregnation occurs after this terminus. The fructification of two ova, or of a single ovum with two nuclei, at one and the same coitus, results in the so-called twin pregnancy, while, in order to constitute superfecundation, two several approaches at different times are necessary. The possibility of superfecundation in the normal uterus is scarcely questioned, while the cases of its occurrence in bifid uteri, though numerically rarer, are quite beyond criticism. Experimental investigations on this point can be, and have been, so carefully made on the lower animals, and the results obtained have so universally confirmed this view, that the general text-books on obstetrics contain full and exhaustive information on this point. Adopting this more restricted phraseology, we find no difficulty in extending this theory to the human race; and in the impregnation of ova thrown off at the same menstrual period, by different and successive acts of coitus before the occurrence of the next menstrual period, we find a satisfactory explanation of the well-known and authentic instances where white women have given birth to white and mulatto children after corresponding sexual relations with a white man and a negro.

The question of superfœtation, on the other hand, is one which cannot be so readily disposed of; and while your committee find that some of the arguments which have been urged against the adoption of this hypothesis must be abandoned, other and more forcible objections have been suggested. We

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can, indeed, no longer accept the statement that the cervix uteri is obstructed with an impassable plug of mucus as soon as conception has occurred, nor can we admit that so close an adaptation exists between the developing ovum and the uterine parietes—at least until the third month—as to render a second impregnation an impossibility. In this connection we would call attention to the accompanying specimen of abortion at the eighth week, submitted to us for examination by Dr. Ludlow, where, in view of this question of superfœtation, the mutual relationship of the maternal and fœtal decidua claimed the especial attention of your committee. There exists, up to this date at least, a space between these two structures, so that they are nowhere in close contact, while the orifices of the os uteri and the Fallopian tubes are patulous; and although the mucous membrane is swollen and engorged, no obstacle could have existed to the passage either of an ovum or spermatazoon. The real difficulty in the adoption of this theory is scarcely alluded to by most authors, viz., the fact that during gestation the function of ovulation is in abeyance, for the periodic ripening and discharge of ova from the Graafian follicles does not take place. In opposition to this view we have, it is true, the statement of Scanzoni that in many post-mortem examinations of women who had died shortly after delivery, he had found indisputable proof of the recent rupture of Graafian follicles. In addition, to substantiate his view that ovulation during gestation is the normal and physiological condition, he urges the fact that pregnant women suffer from the regularly recurring menstrual nisus, the "molimina catamenialia," while abortions oftentimes take place at what would have been a menstrual epoch. Opposed to this statement, however, is the almost unanimous testimony of other experienced observers, that no evidence whatever of a recent rupture of an ovisac is to be found. Kiwisch, in hundreds of post-mortem examinations, never saw a case of this kind; Virchow, who paid especial attention to this point during the existence of an unusually fatal epidemic of puerperal fever, bears similar testimony; Kussmaul, from whom we have largely quoted in the consideration of this subject, has never found more than the single corpus luteum; and the individual testimony of your committee fully accords with the authorities last quoted. In this case, however, as in most of the cases of blighted ova, we can exclude all possibility of superfœtation, from the fact that the two products of conception had only a single placenta, and, as far as can be learned, were enclosed in a single set of membranes. Hohl writes: "We find in most of these cases that the

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twins had only one placenta and were enclosed in the one chorion," and in nearly all of the cases where any detailed history is given this condition was found.

In regard to the cause of the death of the fœtus, your committee would call attention to the fact that in a large majority of the cases this takes place from the third to the fifth month. In 22 cases quoted by Hohl, we find that

In	13,	death	occurred	at	the	4th	month.
"	6,	"	"	"	"	5th	"
"	4,	"	"	"	"	3d	"
"	1,	"	"	"	"	7th	"

Druman relates a case in which "a lady was delivered of a most delightful girl, though her size by no means answered the expectation which might have been formed of her from the looks of the patient; 13 days afterwards there was born the head and parts of a child which had just the appearance of a miscarriage at the fourth month." Velpeau reports six cases, in all of which death took place early in gestation—and this, in fact, is the usual statement. Is the death of the fœtus, then, at this time to be ascribed to the pressure exerted upon it by the other and more healthy product of conception, as Credé and others have asserted, or can we, abandoning this fratricidal theory, find in diseases affecting either the fœtus itself, the cord, or that portion of the placenta from which it draws its nourishment, the true cause of its death? In this connection, we would draw the attention of the society to the frequency of abnormal conditions of the cord as a cause of death in the early months of pregnancy. In the case under consideration it is flattened out, ribbon-like, and is tightly wound around the neck of the fœtus; and however trifling this condition of the cord may be at or near the end of gestation, there can be no doubt but that, at this early date, the nutrition of the child must suffer. Hohl says: "In all the cases we have collected it is mentioned that the cord was membranous and thin, or thin and twisted, or short and lean, while in one case the umbilical artery was wanting." In the four cases occurring in his own practice, the cord was so tightly twisted, that when unwound it at once resumed its previously twisted condition; and in more than one case this has been associated with true stricture of the cord at a point from ¼ to ½ inch from the umbilicus. In six cases this was the immediate cause of death at the fourth month, and in ten at the third month. Credé and D'Outrepont narrate similar cases.

Again, adhesions may form, uniting the cord either to the

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body of the fœtus itself, to the membranes, or to the placenta, as Regis, Smith, and Meissner report, producing thereby disturbances in the circulation, malformations, and death of the fœtus.

Velpeau reports the case of a woman attended by Raysch, who was delivered, with an interval of two hours, of one child full of life, and of an embryo which could not have been of more than three months' growth, with its cord full of hydatids. Montgomery figures a case where "the umbilical cord was only about ½ an inch in length, and much hypertrophied, being suddenly enlarged, on leaving the placenta, to 3 or 4 times its natural diameter, and again as suddenly contracted almost to a thread where it joined the abdomen of the fœtus;" and also a second case "where the umbilical cord was diseased at its placental end, where it was expanded into a lotus-shaped sac, filled with brownish serum." But not alone in the cord do we find the cause of the death of the fœtus; partial placental apoplexy may and often does cause the death of the one child, and it is not unreasonable to infer that this is the state of the case when the history gives the symptoms of impending abortion at the second or third month, which may or may not take place, according to the extent of the hæmorrhage and the individual susceptibility of the uterus.

After the death of the child it may be expelled either alone or with the other ovum, or it may be retained in the uterus, taking no part in the further development of the organ, influencing in no way the continuance and regular sequence of the phenomena of pregnancy. Sir James Simpson is disposed to regard the position of the affected ovum as the determining cause of its expulsion, believing that "if it be situated near or over the os uteri it will be expelled, the uterus will close up, and pregnancy will go on with the remaining child;" and mentions in this connection the case of "a lady who aborted of a fœtus at the third month, and was afterwards delivered of twins at term, having originally conceived of triplets." Your committee is, however, disposed to regard the pathological condition which destroys the life of the fœtus as the determining cause of its retention or expulsion. If sudden and extensive hæmorrhage take place in the placenta, the expulsion of one or both of the children (according to their position in utero) will follow, and such cases are narrated by Montgomery, Velpeau, and many others; but if the death of the fœtus be due to some malformation, or disease of the cord, whereby its nutrition is only gradually affected, that portion of the placenta which supplies it with nourishment slowly ceases to perform its function, and the uterus

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becomes insensibly accustomed to the presence of the foreign body, just as certain large intra-uterine polypi of slow growth do not produce contractions of the organ, while a small amount of blood rapidly poured out is enough to cause the most violent uterine colic. As the fœtus is thus gradually arrested in its development, and deprived of its independent existence, it is pressed against the uterine parietes by the advancing growth and development of the joint occupant of the uterine cavity, which latter no longer enlarges in proportion to its double contents. Now, whatever relation the blighted ovum may have originally held with regard to its fellow, it is gradually pushed towards the fundus uteri, for there there exists the greatest amount of space, and the flattened-out ovum corresponds admirably to the lesser degree of curvature of this part of the organ. Hence it is that the imperfect product of conception is always expelled, when pregnancy has advanced to term, after the living child, oftentimes some hours or days elapsing between the birth of the two.

If the membranes are intact the fœtus does not undergo decomposition after its death, but, preserved in the liquor amnii, may be retained for months in the uterus, its ultimate fate being determined by its age at the time when death took place. On this point Scanzoni writes: "The considerable amount of salts which the liquor amnii contains in solution is an important element in preventing decomposition. In abortions occurring during the first few weeks of gestation, no trace of the embryo, or only fragmentary portions, can be found in aborted ova when the membranes are unruptured, while the thickened and cloudy appearance of the liquor amnii in these cases makes it more than probable that the product of conception has been more or less completely dissolved in the fluid which surrounded it. In the third, fourth, or fifth month, the fœtus looks as though it had been preserved for a long time in a feeble saline solution, viz., it is somewhat shrunken, the skin is in folds, the muscles are thicker and harder, the entire fœtus is in that condition which we designate by the name of 'mummification.' In the last months the alterations are more marked; the entire cadaver is swollen, all the organs are softened, the skin is discolored and is oftentimes raised in blebs, and may easily be removed in large placques; the subcutaneous cellular tissue and all the cavities of the body are filled with a discolored, bloody, serous fluid; the bones of the head are connected only loosely together, and are readily pushed the one over the other; the umbilical cord is infiltrated with serum, is of a livid, bluish-red tint, and softened. These different changes are explained by the vary-

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ing amount of saline constituents contained in the liquor amnii. Scherer and Voigt have shown that the salts diminish in direct relationship to the duration of the pregnancy, but that even at the end of the process the solution is always sufficiently strong to prevent decomposition, unless the membranes are ruptured, and the atmosphere admitted in contact with the parts deprived of vitality."

In closing, your committee would call attention to the fact that neither the health of the mother nor that of the remaining child seem to be at all affected by the retention of the blighted ovum, so long as the membranes remain unruptured. Nor is this other than we would expect, when we remember that the portion of the placenta with which the affected ovum stands in direct relationship, as the necessity for its functional activity is removed, undergoes, like other organs of the body, fatty degeneration, or is the seat of a hæmorrhagic infarctus, which gradually converts it into a hardened, discolored mass. This has apparently taken place in the present case, for it is stated that one of the edges of "the placenta, for a distance of about four inches along the circumference, and for a depth of about one inch into its substance, was altered in character—white, dense, and indurated." In most of the cases, as in the one under consideration, there are no unusual phenomena during gestation, though in a few cases the occurrence of hæmorrhage, after powerful mental emotion, or produced by some mechanical cause, with commencing labor-pains, would lead us to suspect that in these cases more or less placental apoplexy had taken place; but in the majority of instances there is nothing in the history of the pregnancy to warrant the supposition of a blighted ovum.

Dr. J. L. Ludlow then gave the following history of

A CASE OF ACUTE CONGESTION OF THE LUNGS AFTER LABOR.

The following case occurred recently in my practice, which was full of interest and instruction to me, and I hope will be equally so to the members of this Society.

My patient, about 22 years of age, who had always enjoyed an exuberance of health, was taken in labor with her first child. Its progress was perfectly natural and easy. The lochia were free, but not as much as I could have desired. The womb contracted immediately and firmly. The urine was passed freely soon after confinement. During the day nothing occurred out of the ordinary course. She slept well during the night, and expressed herself as having had a delightful and

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refreshing sleep. I saw her again about 9 o'clock in the morning, when I found her somewhat agitated by something which had happened with her nurse. I left her a soothing draught, and saw her again in about three hours. I found her breathing with the greatest difficulty—her countenance purple, her features and extremities cold, her pulse feeble and oppressed. I at once saw that relief must be *prompt* and *efficient*, as she was evidently laboring under *acute congestion* or *apoplexy of the lungs*. I called for a bandage, intending to bleed her, when I was met by the surprise and outcry of some present at the idea of bleeding one *so weak*, and was told that "doctors did not bleed any more." I resolutely held to my determination, and opened a vein in her right arm; it was small, and just at the orifice a small pouch of fat almost entirely closed the opening. The few drops of blood which escaped were more like molasses than blood. Immediately I called for hot water, and bathed the left arm, and after using gentle frictions opened a vein. The blood flowed at first drop by drop, and like that from the orifice on the right arm. By continued bathing with hot water, and frictions, I finally succeeded in securing a freer flow, until it came in a moderate stream; and I did not check the flow until it had assumed a bright color and I had taken about a quart of blood. The change in my patient's condition was visible to all around. The oppression had been relieved; the pulse rose; the face lost its dusky hue; warmth returned, and a good inspiration, with a sweet smile from my almost death-stricken patient, and a whisper of thanks for the relief I had afforded her, gave me assurance that the *present danger* was past. Her chest was then covered with cloths saturated with spirits of turpentine, which were soon replaced by the flaxseed-meal jacket.

At this time I called in Dr. I. Forsyth Meigs, who fully agreed with me in the propriety of my treatment, and congratulated me upon my resolution under such trying circumstances.

The question at once suggested itself, What was the cause of this sudden and frightful condition? During the course of her pregnancy I had examined the urine, both by heat and nitric acid, and no albumen had been found; in fact, only four or five days before her confinement I had done so, and none was present. Before the arrival of Dr. Meigs I had examined the urine by heat alone (not having acid at hand), and found none; but upon his arrival I again tested it both with heat and acid, and found an abundant precipitate of albumen. Our patient was now placed upon the ordinary treatment for congestion of the kidneys, and after a few days the urine gave no deposit.

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She progressed favorably until about a week afterwards, when her milk began to fail, and pain and swelling in the left leg developed itself, which was followed by acute phlebitis. This, however, soon yielded to treatment, and afterwards there was nothing to impede her rapid recovery.

A few thoughts naturally suggest themselves.

1st. What would I have done without my lancet? I always carry one, and I advise all of you to do the same. I had not used mine before for five years; but I was prepared for the emergency.

2d. Was the congestion dependent upon the albuminuria? To answer this, observations should be made upon urine taken just before labor. In this case there was no albumen only a few days before labor.

3d. Does the effort of labor have an effect in producing congestion of the kidneys, as well as of other organs of the body?

4th. If albuminuria is frequent during pregnancy, have we not gone too far in neglecting the use of the lancet and in relying too much on other means to restrain the plethoric condition of the system, especially in first pregnancies?

Dr. Ellwood Wilson remarked that his first impression on hearing the case detailed was that there would be albumen found in the urine. He thought that this condition of the lungs was a result of the presence of albumen in the urine. He had seen a case in which it was impossible to count the pulse, from its frequency. The patient was bled, and after the congestion was relieved she was stimulated, and recovered. He recalled another case, in which the woman was left, after delivery, in a good condition. He was called to her hastily, and found her apparently dying, but she recovered under a similar treatment.

In all these cases albumen was found in the urine. In many cases, after the albumen has been removed by treatment it will recur, and these patients need careful watching.

Dr. Wilson's custom is to test, weekly, the urine of those patients, especially primiparæ, who manifest ill-health during pregnancy.

Dr. Parry gave the details of a case of pulmonary apoplexy analogous to those given by Dr. Wilson, which recovered under the use of stimulants alone. He thought the albumen in the urine of all these cases was probably the result of the venous congestion.

Dr. Wilson said he was glad to have confirmation of the fact that about 85 per cent. of the cases of albuminuria occur in first pregnancies.

Dr. Goodell then detailed a

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CASE OF EXCESSIVE MASTURBATION,

in order to obtain the sense of the Society as to the advisability of the operation of clitoridectomy.

A woman, aged 30, came to him and earnestly begged him to amputate her clitoris, to which organ she referred her whole trouble. She began to practise self-abuse at the age of 14 years, and has continued the habit ever since. For a number of years she masturbated five, six, or seven times daily. She was a seamstress by occupation, and worked at the sewing-machine, but in no instance was she sensible that the treadle-movement had awakened the erotic orgasm. By strong effort she could now control the desire somewhat during the day-time, but at night the temptation was irresistible. Even when unsolicited the erotic impulse came on day and night, but now with severe spasms of pain. At night she sometimes awoke and found herself rubbing the parts. The patient, according to her own statement, had led a perfectly pure life in so far as intercourse with the other sex is concerned. Her menstrual flow was regular. Two years ago, while a resident of Baltimore, her health suffered so much that a surgeon, finding the clitoris enlarged in size, amputated a portion, but this without benefit. It was for these spasms of pain, and for the excessive nervous prostration, that she sought relief by an operation.

Dr. Goodell alluded to the fact that some of the cases of amputation of the clitoris reported by J. Baker Brown were permanently cured, and asked the Society whether he should operate or not.

Dr. J. H. Packard asked whether the root of the trouble was in the clitoris.

Dr. Page suggested the use of lupulin. He had made a number of experiments with this substance, and believed it had a great effect upon the animal passions. He had never given it in combination, but always alone. In these cases the passion was uncontrollable, even though the moral sense forbade the habit. Sometimes nothing will control the masturbator but securing the hands.

He did not think removal of the clitoris would prevent masturbation unless the mind of the person had been directed to that organ as the one causing the desire. He recommended the use of lupulin in doses of 10 or 20 grains.

Dr. J. L. Ludlow advised the combination of bromide of potassium with the lupulin. He thought that treatment should also be directed to the base of the brain.

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Dr. Albert H. Smith wished to know how much of the clitoris had been removed in the operation referred to. It was likely that, in an organ so small, there would be scarce any left.

Dr. Goodell replied that he could not answer this question, because the woman was in too excitable a condition to be examined without the presence of a third person. He had, therefore, arranged to have her come to his office at a time when another physician, besides himself, could be present. He had also postponed this interview until after the meeting of this Society, in order that he might be governed by the opinion of the members.

Dr. Smith thought that the course suggested by Dr. Page would be of as much service as the excision of the clitoris. He recommended, in addition, the application of strong styptics.

Dr. Ludlow had used permanganate of potassa and hyposulphite of soda grs. x. to the seat of irritation. He remembered, however, the case of an old woman whose clitoris had been perfectly tanned by all kinds of applications, but no benefit was derived.

Dr. Page alluded to the practice of masturbation in large schools as the probable cause of much of the chorea and other nervous complaints that occur.

Dr. J. H. Packard asked as to the extent of J. Baker Brown's operation. He thought the amputation of the clitoris would have no more effect than the amputation of the penis in the male. He suggested the removal not only of a portion of the hood but the crura and erector muscles of the clitoris.

Dr. Goodell replied that J. Baker Brown does not describe his operation, but states merely that "the clitoris is freely excised."

Dr. Harris said that reference had been made by French physicians to the evil effects of sewing-machines. This applied to the French machines only, which were worked by a double treadle, and necessarily with alternate action of the feet. On the other hand, the American machines were worked with a single treadle, on which both feet were placed.

Stated Meeting, April 3, 1873—Dr. Wm. Goodell, President, in the Chair.

Dr. Parry presented a specimen and read the histories of three cases of

RUPTURE OF THE UTERUS.*

Dr. Goodell referred to an interesting feature of this speci-

* See page 115.

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men in the length of the cervix uteri. This was about three inches, and the fact shows that what the books say upon that subject is an error.

Dr. Ingham asked of the Society the usual site of rupture of the uterus. In this case the portion ruptured was not that upon which the child would press during labor.

Dr. Harris said that rupture takes place at all points. In many cases it begins at the cervix and extends up to the fundus.

Dr. Goodell instanced cases in which the rupture had taken place under the surface of the placenta from a concealed hemorrhage.

Dr. A. H. Smith had seen ruptures at the fundus, through the cervix, through the anterior, posterior, and lateral walls of the uterus, and at the vaginal attachment. He referred to a case in which the injury was not detected during life. This patient lost much blood, of a thick, dark, grumous character. The rupture involved the whole extent of the fundus.

Dr. McCall asked whether the thinning of the walls of the uterus presented was due to disease.

Dr. Parry stated that Dr. Bertolet had examined microscopically the tissues of the organ, but found no disease.

In answer to a question by Dr. Smith, he also stated that *no* ergot had been administered during labor.

Dr. Wm. Goodell then related the following history of a

CURIOUS ACCIDENT FROM THE USE OF THE FORCEPS.

At 1 o'clock A.M. a young primipara was roused out of a sound sleep by the escape of her waters—the os uteri at that time barely admitting the finger. She immediately went into labor, but with pains unusually feeble and infrequent. By 10 o'clock A.M. the os had become dilatable, but the head, which presented transversely with the occiput to the left ilium, had not engaged. The woman being undersized, a contraction in the conjugate diameter was suspected, and the brim was therefore carefully measured and swept by two fingers. The pelvis was found ample, and, as no obstacle to the descent of the head could be discovered, the delay was attributed to the feebleness and infrequency of the pains. Friction, stimulants, enemata were accordingly resorted to, but without any response whatever. As she strongly objected to the forceps, ergot was at last given, but with barely any increase in the severity of the pains. Finally the vectis was, without her knowledge, slipped in over the occiput; but a half-hour's trial with it affected

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neither the pains nor the position of the head. As she felt inclined to sleep, she was left for three hours. At 3 o'clock P.M., no progress having meantime been made, she consented to an instrumental delivery. Hodge's forceps were accordingly applied —and with great ease—to the sides of the child's head, the female blade being first introduced and rotated up under the symphysis. The lock looked directly towards the left ilium, and the forceps, therefore, became virtually a straight one, in so far as the pelvic curve was concerned. The handles, of course, pressed very firmly upon the coccyx, but the interval between them was rather greater than when the biparietal diameter is grasped. In the absence of any other manifest cause, this divergence of the handles was attributed to a large head. Traction was at first made during the pains only; but as these came at long intervals, and without gaining any progress, it was increased in frequency. After an hour's hard work the head began, during traction, to bear upon the floor of the pelvis; but as the occiput now tended to rotate into the hollow of the sacrum, and, in fact, had reached the left sacro-iliac synchondrosis, Dr. G. decided to end the labor with the vectis.

With that view the sacral blade was first removed; but no prudent force could release the pubic one. It was firmly held by some hard body, which could just be touched by the finger, and which evidently projected through the fenestra. The sacral blade was therefore reapplied, the occiput forcibly rotated to the left acetabulum, and the head with much difficulty delivered in that oblique position. The disturbing cause was now evident enough: the *dorsal* surface of the child's right hand lay against the cheek, and the elbow, being, on this account, raised up from the body and in contact with the head, had been noosed by the fenestra of the anterior blade. The tip of the blade was deeply buried in the palmar aspect of the wrist; the proximal portion of its concave edge seemed lost in the soft tissues of the inner surface of the humerus; while all of the arm and forearm lying between these two points projected through the fenestra. The humerus, just above its middle, was broken in two, and the epiphysis of the radius had been separated from its shaft. The child cried lustily, and, otherwise, seemed none the worse for the rough usage to which it had been subjected. By the use of card-board splints perfect union, without any deformity, was gained in seventeen days. The mother required the catheter for four days, but made a prompt recovery in the usual time, being out of bed on the eighth day. In conclusion, Dr. Goodell remarked that, as his conduct in this case laid him open, perhaps deservedly so, to

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the charge of carelessness, he would offer in extenuation the unique character of the accident, the refusal of his patient to take ether, and the great sensitiveness of her tissues, whereby he was unable to introduce his whole hand into the vagina. Had he earlier recognized the cause of the delay he would have delivered by version.

Dr. A. H. Smith detailed briefly two cases of obstruction to labor from the intervention of the hand. Both required the use of the forceps. In the introduction of the forceps the blades should be kept closely hugging the sides of the child's head. In doing this by inclining the handles outwards, care should be taken not to carry them too far from the median line.

Dr. Parry referred to the case of clitoridectomy whose history was given by Dr. Goodell at the last meeting. She applied to the Presbyterian Hospital, after having been operated upon by a surgeon of this city, having failed to keep her appointment with Dr. Goodell. In the operation, which was attended with hemorrhage, the surgeon had freshened the internal edges of the labia minora, and, bringing them together, put in three or four stitches, thus making a sort of capsule out of the nymphæ. The uterus was anteflexed, but the external genitals normal. She still masturbates.

Dr. Parry showed a specimen of post-laryngeal abscess, which he had not found described in the books.

The Museum Committee presented the following appeal, which was ordered to be printed :—

APPEAL OF THE PHILADELPHIA OBSTETRICAL SOCIETY FOR AID IN THE FORMATION OF A MUSEUM OF DISTORTED PELVES, OBSTETRICAL AND GYNÆCOLOGICAL INSTRUMENTS.

At a recent meeting of the Philadelphia Obstetrical Society, it was decided to establish a Museum, for the collection of deformed and distorted Pelves, and for the preservation of Obstetrical Instruments possessing historical value, or illustrating new methods of treatment.

The Society was led to take this action for these reasons:

1st. No subject at present possesses more interest to the Obstetrician than the study of the various deformities of the Pelvis, their mode of production, their influence on the process of parturition, and the principles which should guide the accoucheur when operative interference is deemed necessary.

The Profession is gradually becoming more and more convinced of the influence of contractions, more or less marked, in causing not only tedious and difficult labors, but also in the

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production of mal-presentations and of many of the accidents of labor.

At present there does not exist any extensive collection of Female Pelves, by which a comprehensive study of this subject can be successfully undertaken. Feeling, therefore, the importance of such observation, the Society purposes to establish a Museum having this object in view, and would therefore earnestly solicit such specimens of contracted Pelves as may be in the possession of members of the Medical Profession, who may be willing to yield the pleasure of individual possession in order to assist in forming a collection which will allow a wider and more comprehensive survey of this subject. If the original specimen cannot be sent, casts or photographs are solicited. In certain cases, possessing unusual interest, the Society is prepared to offer a pecuniary recompense, should this be desired.

2d. Recognizing the fact that various Instruments, designed for Obstetric Manipulations, or for the performance of operations in Uterine Surgery, having been superseded by new and improved models, now possess only an historical interest, the Society has determined to collect such instruments and preserve them, as illustrating the progress of this branch of our art in America. We would also warmly urge upon the inventors of new or modified instruments, and upon Surgical Instrument Makers in general, the desirability of presenting to the Society specimens of Instruments, Pessaries, and special mechanical contrivances which they may be desirous of bringing before the Profession.

All objects, whether embraced in the first or second class, will be conspicuously placed in the Museum of the Society, after having been labelled with an explanatory description, and with the name of the donor.

They will also be carefully preserved, open to the inspection of all interested in the support and advancement of Obstetrics and the kindred branches of Medicine.

All objects for the Museum may be sent to the Secretary of the Society, Dr. J. V. Ingham, No. 1342 Spruce Street, Philadelphia, who will at once acknowledge their receipt, and will gladly furnish such additional information as may be desired.

By order of the Society.

Wm. Goodell, M.D., *President.*

Wm. F. Jenks, M.D.,
J. V. Ingham, M.D.,
Horace Williams, M.D., } *Committee.*

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TRANSACTIONS

OF THE

Philadelphia Obstetrical Society.

VOL. III., 1873-74-75.

Reprinted from the American Journal of Obsterics.

PHILADELPHIA:
1876.

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The faulty paging of this volume was owing to the mistake of the printers in reprinting from the different numbers of the "American Journal of Obstetrics." The "CONTENTS" of the *first forty-six pages* have been placed distinct from the remainder, so as to prevent confusion.

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CONGENITAL SYPHILIS IN SIX SUCCESSIVE INFANTS.

By WM. T. TAYLOR, M.D., Phila., Pa.

(Read before the Philadelphia Obstetrical Society, July 3, 1873.)

Mrs. Julia M. was married in 1866, at the age of 18 years, and soon after becoming pregnant, gave birth to a premature child at five and a half months of utero-gestation, having had a chill 4 days previous to her labor.

She became pregnant a second time; had a chill one week before the sixth month of utero-gestation, when she again had a still-born child.

Her third pregnancy occurred in 1868, when she had a chill at the end of the seventh month of her pregnancy, followed in 10 days by labor, when another dead babe was born, whose skin was exfoliating.

Her fourth pregnancy occurred, and at the eighth month she had a chill, followed in 2 weeks by labor. Her health had been very good, and the child quite vigorous during its uterine life. In consequence of her former misfortunes, she was very careful of herself, and had met with no injury.

This child was very repulsive, for the skin was peeling from its whole body.

After its birth she had a copious secretion of milk, which disappeared rapidly under the local application of ext. belladonnæ.

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Again she became pregnant for the fifth time, and passed through the whole period of utero-gestation successfully. Her child was born apparently healthy and strong, but when 3 weeks old an eruption appeared on the feet, which extended gradually over the body. This eruption had the appearance of bullæ filled with a sero-purulent liquid, which burst, leaving sores.

When 8 weeks old the child was attacked with a diarrhœa, which in a few days caused its death.

During her sixth pregnancy she came to engage my attendance; and being in the seventh month of utero-gestation, I gave a teaspoonful 3 times a day of the following mixture:

℞. Hydrarg. bichlorid., gr. ij.
Potas. iodid., ʒ ij.
Aquæ font., ℥ j.
Syr. sarsap. co., ℥ iij.

If I had been aware of her pregnancy sooner, I should have used the medicine earlier, with the hope of removing the syphilitic taint from her babe.

On April 13th, 1871, she gave birth to a very large, fat, healthy-looking girl, after an easy labor, and in a few days had a profuse secretion of milk, which the child eagerly took.

On April 19th the mother had a chill, followed by a copious perspiration and two or three discharges from the bowels, which prostrated her very much. She had difficulty in breathing, pain in the stomach, and was very nervous, assuring me that she was dying, and that I should not see her alive in two hours. The secretion of milk was arrested, but the lochia were quite profuse.

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An antispasmodic relieved her, and under the use of cinchona and valerian she soon recovered.

When the child was two weeks old, there was some excoriation of the skin on the neck, with pustules on the palms of the hands and on the soles of the feet, which extended to the thighs and nates. There was also an eruption of the same character about the mouth. I gave it a teaspoonful three times a day of the following:

℞. Hydrarg. c. cretâ, gr. xij.
Syr. rhei aromat., ℥ ss.
" sarsap. co., ℥ j.

May 1st. The pustules on the hands and feet are dry; the excoriation of the neck and the eruption on the nates are better; in fact, the disease is fast disappearing. About this time the babe had to be nourished wholly on cow's milk, for the lacteal secretion of the mother had ceased; when it became affected with a diarrhœa and vomiting, which in a few days terminated in death.

Since then she has not been pregnant, but I have advised her that if she becomes so, to report to me early, so that I can put her on the use of antisyphilitic medicines—hoping by such means to prevent her offspring from becoming affected with the venereal poison.

Her husband denies having ever had the disease, yet being a "gay and festive" youth, I have reason to doubt his veracity; his wife is perfectly healthy.

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EARLY PREGNANCY.

BY ROBERT P. HARRIS, M.D., Phila., Pa.

(Read before the Philadelphia Obstetrical Society, May 1, 1873.)

IN a review of the last volume of the "Transactions of the Edinburgh Obstetrical Society," which I presented in the April, 1873, number of *The American Journal of the Medical Sciences*, there appeared the report of a case of early pregnancy by Dr. James Young, the subject of which was a white girl who commenced to menstruate at 13 years and 7 months, gave birth to a large male child at 14 years, 10 months, 13 days, and was delivered of a second when just 16 years old. My remarks upon this case, meeting the eye of Dr. Charles M. Ellis, of Elkton, Maryland, have been the means of bringing to light the reports of two cases of a more remarkable character, which I now present:

1. A white girl, born September 22d, 1859; began to menstruate when 11 years and 4 or 5 months old; gave birth to a male child, rather over-size, on June 21st, 1872, under the care of Dr. Ellis, when 12 years and 9 months old. The mother was stout and well-developed, weighing at the time of her delivery about 100 pounds. She had a natural labor lasting eighteen hours, the vertex presenting in the second position, and the perineum escaping laceration. She had an abundance of milk, and nursed her child.

2. A mulatto girl, born October 1st, 1848; commenced to menstruate in summer of 1860, at the age of 11 years and 9 months; gave birth to a well-developed

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female child, September 20th, 1861, when 10 days under 13 years old; and was a second time delivered, the child being a full-sized male, May 2d, 1863, when 14 years and 7 months old. The father of the first child was a white boy of 17.

A somewhat similar case was reported in 1849, by Dr. George A. Ketchum, before the Medical Society of Mobile, Alabama. . . . . A negress, just 13 years old, gave birth to a female child at full term, which at the age of 10 years and 9 months began to menstruate, and at 12 became pregnant. Before the mother was 16 years old she gave birth to a second daughter, whose menses first appeared at 7 years and 6 months. If the first daughter became a mother in due time, as anticipated, the first-mentioned negress must have become a grandmother at 25 years and 9 months. Sexual precocity is in many instances inherited.

A negress under 15 (exact age not given) became the mother of twins, at Nassau, New York, in 1822; but I do not regard this as so remarkable as the second case given by Dr. Ellis, where two single births occurred at the age of 14 years and 7 months. We have not known this to be exceeded in the United States; but the late Prof. Chas. D. Meigs reported the case of a girl of Spanish blood, at Maracaibo, who gave birth to one child at 12 years of age, and twins before she was 14.

In my researches upon "Early Puberty," read before this Society,* I referred to three *well-authenticated* cases of white American girls, all younger than those just related. One of these occurred in the State of

* Published in *The Amer. Jour. of Obstet.*, Feb., 1871.

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Kentucky, a second in Massachusetts, and the third in this city. The Kentucky mother became such at 10 years and 13 days, the Massachusetts at 10 years, 8 months, and 7 days, and the Philadelphia at 11 years and 3 months. The first was a case of *infantile* sexual precocity, and the others belonged to a much later period, the menstrual function having been established but a few months prior to conception. All had well-developed pelves, large mammæ, and the general marks of womanhood, and bore living children.

Although there is a general sexual precocity in tropical countries, *freaks of nature*, by which young children of either sex are made to approximate the early development of the lower animals, are to be met with even as far north as St. Petersburg, where it is claimed that a girl became a mother who was under 9 years of age. Sir Astley Cooper saw a girl in Scotland with a full-developed pelvis at 7 years and 5 months, who, from his description, could no doubt have become a mother at the age claimed at St. Petersburg.

Fortunately, these very precociously-developed female subjects differ, as a general rule, from their counterparts of the male sex, who more closely resemble the lower animals in their salacious propensities, else we should more frequently meet with juvenile illegitimacy. We have several times met with cases where the menstrual function was established between the ages of 9 and 10 years, in girls whose physical development was in correspondence with their sexual, and in whom it was highly probable that impregnation was possible; but in none of them was there any apparent

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change as to their moral relationship with the male sex. They were all from the higher walks of life, and carefully trained, otherwise they might have been brought under the influence of temptation as in the examples reported.

The *incipiency of menstruation* in our large cities, as a general rule, marks only the gradual approach of the nubile period, and occurs before there are very decided evidences of womanly development, especially in the maturity of the pelvic diameters; so that the possibility of conception is still quite remote. Pelvic expansion, which appears to have been general in cases of early pregnancy at any age, enabling the subjects of it to bring forth living children of full or nearly full size, is evidently only in its incipiency in a large number of young menstruous girls.

The *preparatory period*, which usually exists between the first appearance of the menses and the age of possible conception, varies from a few months to several years; but there have been instances in which impregnation followed the first menstrual epoch, or even took place before it had appeared. In tropical countries, where young menstrual girls are given in marriage, impregnation very rarely takes place until some time has elapsed, thus marking the duration of this period of sexual preparation. In cases where sexual maturity is attained at the age of 9, 10, 11, or 12 years, we have the conditions which, being sometimes found in the immorally or carelessly trained, lead to juvenile illegitimate pregnancy.

The precocious maternity in large manufacturing

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towns, where thousands of very young girls are congregated together in long, over-heated work-rooms, is no doubt to be attributed to the stimulating effects of a high temperature acting upon their sexual system, and the immoral surroundings of such a life. Some of the most remarkable examples reported in England have been thus accounted for by medical observers. Although menstrual precocity belongs to no special social position, it very seldom leads to early pregnancy except in the lower walks of life. This remark is of course not intended to apply to the inhabitants of tropical regions, where the normal age of nubility is much earlier than with us. Of the three most precocious of the American cases, one was the daughter of very humble parents, another was born in an almshouse, and a third was raised by her mother in a house of prostitution. As there are, as near as can be computed, four or five girls in every thousand in this city who menstruate before they reach the age of ten years, it will be very readily seen that moral influences are the main preventive of premature maternity.

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A CASE OF PUERPERAL ECLAMPSIA.

By R. A. CLEEMANN, M.D., Phila., Pa.
(Read before the Philadelphia Obstetrical Society, August 7th, 1873.)

The patient was an American lady, of nervo-sanguine temperament, highly excitable and self-indulgent, aged 33 years. She had had during the ten years of her married life two still-born children, at about full term, and at least two abortions; with which events there was a history of profound albuminuria, convulsions, and mania.

On January 27th, 1870, having reached the middle period of another term of pregnancy, she fell suddenly to the floor while approaching the tea-table. From the testimony of a servant in attendance, this appears to have been due to a convulsive seizure; the lady herself was unaware of any muscular contortion, or loss of consciousness, declaring that she seemed merely to lose control over her limbs. I saw her within a half-hour after her fall; she was then hemiplegic on the right side; when she protruded her tongue, its point was deviated to the same side; and there was observed some distortion of the face, the lack of normal expression being also on the right. Her mental faculties seemed at first little if at all disturbed, her features wearing merely a look of anxiety, but before long she manifested confusion of ideas and difficulty of speech. Her pulse was hard and reached 98 beats in the minute.

On inquiry, I learned that up to this time in her

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pregnancy she had felt unusually well, and had been in excellent spirits; but that her urine had been recently found to be albuminous by Dr. E. Wilson.

In a day or two her mind became perfectly clear, gastric irritability, which had been present, disappeared, and the paralysis diminished in some degree, general symptoms of asthenia remaining; subsequently there slowly returned a slight increase of power over the affected muscles.

After six weeks had gone by the patient had three convulsions (March 6th); these were preceded, during several days, by some pain in the left lumbar region, and for two days by a slight appearance of œdema—without pitting of the integument on pressure—and some difficulty of respiration, a wheezing sound being heard at the close of expiration. Meanwhile the urine had become loaded with albumen. Coma—not profound, the patient being easily roused—with irritability of the stomach, followed the convulsions, and persisted for a week, the urine all the while containing the same large amount of albumen. At the end of this time an entire ovum was expelled from the uterus, after a labor of four hours' duration. The fœtus had advanced to six and a half months, and was dead; the placenta was small and beginning to degenerate. Four hours subsequent to the parturition the patient had an evacuation of urine (9 P.M.), and this was repeated several times before the next morning's visit.

Till the third day following, with the exception of an alarming, but evanescent, syncope on the evening of March 14th, the patient did well, while the albumen in

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the urine diminished to scarce a trace. On this day (March 16th) the pulse, not wanting in fulness, ran up to 100 beats in the minute, while the patient talked incoherently to herself, though answering rationally the questions put to her. The breasts were hard and swollen; the œdema was scarcely to be perceived in the face, and had disappeared from the paralyzed extremity where it had been especially observed. There had been a large evacuation from the bowels during the previous afternoon, followed in a few hours by another. Towards evening she became very restless, but after 11 P.M. (at which time a hypodermic injection of $\frac{1}{8}$th gr. morphia was given), slept quietly for two hours. She was then roused to take some milk-punch, which she received unwillingly, appearing much frightened and disturbed. Quieted by her nurse, she was once more tranquil for about half an hour, when she began throwing off the bed-clothes and attempting to rise from the bed, manifesting in her exertions a good deal of muscular power; finally, shortly before I reached her, froth appeared about her mouth. I found her in a state of extreme prostration, with a fluttering, scarcely perceptible pulse. From this condition, after uttering a sharp cry and after a few long gasps, she rallied; the pulse becoming fuller and of 100 beats in the minute. An attempt at external stimulation was made, but the patient suddenly died, respiration ceasing first, the heart stopping afterwards.

In the treatment of this case, rest in bed was enjoined from the time of the paralytic seizure. Free excretion from the kidneys was insured by the continuous use of

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carbonate of potassa, and from the bowels by senna and other evacuants, while the strength of the patient was fostered by iron and different tonics, stimulants, and systematic nourishment. Chloric ether, hydrate of chloral, and opium, were prescribed as anodynes and soporifics, the last drug very cautiously. For the paralysis, friction was first used, then nux vomica, and finally faradization. In the convulsions of March 6th ether was administered by inhalation.

A very striking feature of the above record is the occurrence of convulsions followed by persisting paralysis in the early period of mid-pregnancy. In regard to the nature of the convulsive movements, unfortunately the testimony is vague. The muscular disturbance may have been merely such as occasionally accompanies ordinary attacks of apoplexy, and, therefore, symptomatic only of sudden intra-cranial disturbance; but the history of the previous pregnancies of the patient and the albuminous condition of her urine make more fair the presumption that puerperal eclampsia had supervened. The complication of true vascular extravasation within the cranium is, however, inferred, from the involvement of the muscles of the tongue and of the face in the subsequent paralysis, from the lack of improvement in the power of motion, after a considerable lapse of time—even, indeed, when the uterus had discharged its contents and the urine was free from albumen—and from the character of the pulse after the accident, which also supports this view. But the condition of the patient with respect to vascular tension, at this time, was not considered such as to

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warrant venesection; and subsequently asthenia contra-indicated this measure. The opportunity for employing the other most prominent therapeutical resource in puerperal eclampsia—the emptying of the uterus—presented itself with the convulsions of March 6th, and during the subsequent week of coma. But it will be observed that this was left to the initiative of Nature, who proved herself capable of accomplishing it successfully without aid. After delivery, the kidneys were freed from congestion by copious secretion, and appeared, in the absence of albumen from the urine, to be in a condition favorable to returning health.

But the patient died from apnœa, since the heart was still beating after respiration had ceased. In connection with this mode of death it is interesting to note that the patient, with a cry and a few long gasps, rallied from the syncopal attack in which I found her just previous to her death. This succession of phenomena resembles what occurs in some instances of laryngismus stridulus in young infants; and when we recall that the laryngeal spasm is sometimes accompanied by general convulsions, we may presume incomplete eclampsia expressed here. The determining cause of these symptoms, and of the intra-cranial damage which annihilated the function of the medulla oblongata, may possibly be found in the mental shock of a domestic trouble which became aggravated at this critical period.

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

REPORTED BY J. V. INGHAM, M.D., SECRETARY.

STATED MEETING, MAY 1, 1873. DR. W. GOODELL, PRESIDENT, IN THE CHAIR.

DR. R. P. HARRIS read a paper giving an account of some cases of early menstruation and conception (see page 4).

DR. LUDLOW referred to two cases under his own observation. One, a child of 12 years of age, was delivered at term. She had never menstruated. Another case, a negress, was delivered at 13 years of age.

DR. W. T. TAYLOR referred to a case that he had reported in *The Medical Examiner*, in 1852; the girl was 13 in February, and in August was confined.

DR. MCCALL had been called to a girl 13 years and 3 months, and delivered her of a four-months' fœtus. She made a good recovery.

DR. DE F. WILLARD gave the history of a case as follows: A child, brought up in a house of prostitution from the age of 8 years, had had connection at least once a week with the boys of the neighborhood. At 10 years she menstruated. At 11 years and 2 months she became pregnant, and was delivered by him when 11 years, 11 months, and 24 days old. The labor was normal, and the mother did well for two weeks, when she had milk-leg in both limbs. She afterwards led a life of prostitution, was syphilized, then got married, and has had several miscarriages since.

DR. BETTS mentioned a case of menstruation at 7 years and 5 months.

DR. LUDLOW suggested that some of the supposed cases of early menstruation were merely those of bloody discharges.

The report of the committee on the preparation of rules for the management of infants during the hot summer months was then read and adopted.

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STATED MEETING, JUNE 5, 1873. DR. W. GOODELL, PRESIDENT, IN THE CHAIR.

DR. J. V. INGHAM presented two specimens of hydrops tubæ Fallopii.

These specimens were of interest from their dissimilarity. The first one exhibited was entirely free from attachments to the uterus, except by the natural extremity of the tube. In the other case, however, the cysts were bound down upon the posterior wall of the uterus by an extensive perimetritic inflammation. The points of interest suggested were the diagnoses and treatment. Could the cysts be recognized except through the rectum? Should they be punctured?

Dr. Ingham also exhibited a retro-uterine fibroid tumor.

DR. JENKS remarked that these cases were of interest on account of points of diagnosis. There are many pathological conditions which upon rectal exploration might be confounded with a tumor of the posterior wall of the uterus. Among others an enlarged ovary, a cancerous growth, an inflammatory effusion, or exudation in which absorption is taking place, were suggested.

DR. GOODELL asked the members of the Society to give the results of their experience in the use of Hildebrand's method of treating uterine tumors by the hypodermic use of a solution of ergotine in glycerine or water.

He referred to one case which had been so treated with benefit. Another case had been reported by Dr. Ashhurst, in which the tumor materially diminished under the use of ♏xx. thrice daily of a solution of ergotine.

In only one case did he know of any tendency to abscess. In reference to the hypodermic injections, the great trouble was the intense pain experienced.

DR. LUDLOW referred to a case under his own care, in which the tumor diminished under the use of ergot and iodide of potassium. He instanced another case in which the tumor had disappeared, but returned after a few years.

He asked whether many successful cases of the use of ergotine had been reported.

There was a tendency to too great a haste in generalizing from small data.

DR. GOODELL referred to a recent article in *The American Practitioner*, in which two cases were given, and to several reported in British journals. He suggested that care should be taken to make the injections in an unexposed portion of the body, as the discoloration of the skin by the ergotine was very

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persistent. The least sensitive part of the body has been found by Dr. Hildebrand to be in the region of the umbilicus.

Dr. Ludlow suggested the possible danger of peritonitis from the formation of an abscess in this position.

A highly interesting specimen of twin embryo, belonging to Dr. S. A. Gerhard, was exhibited.

Dr. A. H. Smith gave a brief history of the case as he had obtained it from Dr. Gerhard. The patient had had several miscarriages previously.

She had gone five days beyond her last menstrual period, when, after some extra exertion, she was seized with a profuse hemorrhage, with violent pain. On examination the os was not patulous, and the cervix rigid and firm. A tampon was introduced, and suffered to remain for eight hours. Upon removing the tampon the Doctor found a large clot following it, upon which was the glistening surface of one of these cysts. One cyst was of the size of a walnut, the other of a hen's egg. Dr. Smith thought that the patient could not have been pregnant more than three weeks, but these sacs were distended to the size generally found at two months, therefore there must have been amniotic dropsy. This was probably the cause of the abortion.

Dr. Jenks made remarks at length upon the development of ova at an early stage.

Dr. Jas. H. Cathcart presented a specimen of cancer of the uterus. The morbid growth had first appeared as a cauliflower excrescence, nearly filling the vagina, and springing apparently from the inner surface of the posterior lip of the cervix. This was removed entirely by scraping, leaving the neck clean and with no tendency to bleeding. In two months the mass had returned, and on consultation with Dr. Parry the cervix was amputated, but the growth returned in three weeks' time. After being treated by several irregular practitioners the patient came under the care of Dr. Barr, through whom the specimen was obtained.

Dr. Parry remarked one peculiarity of the cancerous mass, —that was the unusual extent to which it had involved the body of the uterus. Another feature was the dilated ureter and pelvis of the kidneys, yet these were apparently not dependent upon the carcinoma.

Dr. Wharton Sinkler exhibited a child with congenital deficiency of the left forearm. This case was reported to the Society by Dr. Geo. Pepper, and was again shown as being of interest in connection with the case of Dr. Beecher.

Dr. J. L. Ludlow presented a collection of stomachs of

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infants of various ages, from nineteen days to five months. These stomachs did not vary in size, in accordance with the ages of the children.

Dr. Ludlow remarked that he presented these specimens to bring the attention of the Society to the fact that the quantity of milk necessary for the infant does not depend upon its age or size, for in many cases a large child may have a small stomach, and a small child a large one. He thought that there was a limit to the quantity of food, and the time of feeding, which should be carefully ascertained.

Dr. Wm. T. Taylor read an account of a case of successive abortions from congenital syphilis. (See page 1.)

He remarked that the peculiarity of the case was that each succeeding pregnancy advanced a little farther in age. He desired to know the opinion of the gentlemen of the Society in regard to the value of persistent constitutional treatment of the mother in these cases.

Dr. Ludlow remarked that this question had already been before the Society several times, and many cases illustrating the value of such treatment had been given.

He had early noticed the intolerance of iodide of potassium manifested by some patients, the effects upon the Schneiderian mucous membrane, and other symptoms following its administration. Other patients can take it for a long time, or for an indefinite time, without unpleasant effects.

Dr. Parry remarked that there were two facts in this case in favor of Dr. Taylor's theory of constitutional syphilis. The first was the fact of six abortions having taken place; the second was the presence of plantar-pemphigus in one of the children. Dr. Taylor did not mention whether there was any coryza or not. Pemphigus in a syphilitic child does not occur unless associated with coryza. The two symptoms always go together. Observations in thirty cases (twenty-eight French and two of Dr. Parry's) went to show that the power of the father to transmit syphilis was questionable. In this case the father was healthy. If the mother was also healthy he should be doubtful of the existence of syphilis. Other conditions could cause results similar to those in Dr. Taylor's case. Dr. Parry then referred to a case of a woman who had had six abortions, owing in every instance to fatty degeneration of the placenta.

Dr. Taylor remarked that he had not noticed any coryza.

The report of the committee upon the subject of congenital deficiencies was then read.

After the reading of the report the subject of the effect of

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maternal impressions upon the fœtus in utero was discussed by several gentlemen, who detailed instances supporting the popular views on the subject.

Dr. Ludlow had four well-authenticated cases. In one case the mother daily passed a child whose limbs were bandaged for white swelling. Her child was born with every limb dislocated. Another mother was frightened by a hideous face; her child was born with a hare-lip. In another instance the mother placed her hand upon her face on the occasion of a fire; the child was born with a red fire-mark upon the face.

Dr. Taylor had seen a child whose right hand was without fingers. The mother accounted for it by the fact that early in her gestation a beggar asked her for alms, at the same time thrusting out a mutilated hand.

Dr. Reuel Stewart recalled a case in which the mother asked immediately whether the child was well formed about the hands. Each hand had a supernumerary finger. The mother had been impressed by seeing a man pass her house with these supernumerary fingers.

Another child had a blue mark upon its face. The mother had been affected by a child falling and cutting its face.

Dr. J. V. Ingham exhibited a specimen of soft soap, as recommended by Dr. Atthill, for making vaginal examinations. He had used this soap with much satisfaction. He preferred it to lard, oil, etc., as a lubricating agent, because it effectually prevented any smell from remaining upon the finger.

Dr. J. L. Ludlow referred to a curious case of irritable nipples. The mother had been preparing her nipples by using strong washes of alum, borax, etc. After the birth of the child it was unable to draw the milk, as the nipple had been tanned by the applications. Poultices were applied, and a thin skin removed, and then the difficulty was over.

Dr. Albert H. Smith was in the habit of recommending the hardening of the nipples, but had never seen any trouble arising from the use of astringent washes.

Stated Meeting, August 7, 1873. Dr. W. Goodell, President, in the Chair.

A SPECIMEN OF SENILE UTERUS.

Dr. Beecher exhibited the uterus of a woman 89 years of age. This uterus was very small, and contained in its cavity a small quantity of a dark-colored fluid. The vaginal portion of the cervix was absent.

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Dr. J. V. Ingham referred to the relative proportion of the neck and body of this uterus. In an infantile uterus the length of the neck is about two-thirds of the length of the entire organ. In this case it is about one-half—so that it is restored to the condition of childhood—in fact, the condition of second childhood.

Dr. Goodell saw two points of interest in the specimen. The first was the presence of fluid in the cavity of the uterus. This explains the cause of painful leucorrhœa in old persons. In them the discharge is often suspended for a few days, and then escapes with a gush. This is on account of the senile contraction of the internal os. He had found at times more difficulty in the passage of the sound in senile than in anteflexed or retroflexed uteri.

Another point of interest was the effacement of the vaginal portion of the cervix through atrophy. In child-bearing women of 30 or 40 years of age, the same effacement will occasionally happen from the stripping off of the vagina from the cervix through the upward traction of the womb during pregnancy and labor. This makes the adjustment of pessaries difficult.

Dr. Ingham presented to the Society a collection of obstetrical instruments—a donation from Mr. Gemrig for the Museum.

CASES OF PUERPERAL ECLAMPSIA.

Dr. R. H. Cleemann then read a history of a case of puerperal eclampsia—(see page 9.)

Dr. Ingham suggested that the convulsions in some puerperal cases may be due not to uræmia, but to brain lesions, and instanced a case of a woman dying from puerperal convulsions in the wards of the Philadelphia Hospital, in whose brain a large serous cyst was found.

Dr. Goodell asked Dr. Cleemann to what he attributed the fatal termination of his case.

Dr. Cleemann replied that he thought it was due to effusion, either serous or sanguineous, into the medulla oblongata, for the respiratory function ceased first. He thought that many similar cases of sudden death were due to the same cause.

Dr. Goodell thought that the unilateral character of the attack and its duration showed that the disease was hemorrhagic, rather than serous in character. He considered the case an apoplectic one, and the effusion blood, not serum.

Dr. Ellwood Wilson remarked that it was well to bear in mind the excitement under which the patient labored previous to the second attack.

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Dr. Cleemann said that he had attributed these symptoms to puerperal mania.

Dr. Goodell related the history of an attack of puerperal eclampsia, recently occurring in a primipara, 20 years of age. She was seized with a violent headache, and as she had partaken of green corn, her physician administered an emetic, following it with bromide of potassium. That evening she had thirteen convulsions. Opium was given with the result of checking the convulsions for two hours. Next morning Dr. Goodell saw her. Her face was puffy and extremities œdematous. The pulse was so feeble that he did not use the lancet. He found, on examination, that the os would barely admit one finger. Upon consultation it was decided to deliver the patient. He therefore introduced Barnes' dilators at 7 o'clock, and at 10 put on the forceps and delivered the child. The patient never rallied from the condition of stupor, and died. His experience in these cases had led him to believe that ether could not be given in sufficient doses to control completely the muscular movements, induced by any artificial assistance. Chloroform, however, was not open to this objection, and he therefore preferred its use. Before delivery he had drawn off ten ounces of urine, which, upon testing, was found to be only slightly albuminous. In these cases the question always comes up whether or not labor should be induced or urged on. If the woman were near to term, if she were œdematous, if the convulsions were frequent, he would bring on labor. Usually labor is induced by the violence of the convulsive movements. Should we leave the initiative to nature or not? This was often a most puzzling question.

Dr. Ellwood Wilson had no fixed rules in these cases. He had recently brought on labor at the eighth month of gestation, and after five days the patient was delivered without accident. The urine of this lady always became albuminous, and was reduced to the amount of six ounces in 24 hours. He thought it desirable in this case to induce premature labor. The child lived for twenty-one days. He did not, however, give this example to establish a rule of action, but he thought he was justified in his conduct by the circumstances of the case. As a rule, he does not hurry on the labor.

Another case, which he had seen with Drs. Meigs and Pepper, a young woman of twenty-one years, was seized with convulsions at ten o'clock at night. They occurred with great regularity at intervals of twenty minutes. At ten and a half next morning he commenced delivery, perforating the child's head with great difficulty. After delivery, which occupied one hour

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and a half, the convulsions recurred at first fifteen, then ten, minutes apart, until the patient died.

Dr. Wilson had had no difficulty in keeping patients under the influence of ether. He had seen a case kept under the use of ether three days and three nights. He referred to the case of a cook, seized with a convulsion in her kitchen. She had sixty-five convulsions and was then bled, after which she had sixty-six more. She was then placed under the influence of ether with relief. On the thirteenth day she went back to her work. He did not believe that chloroform is a safe remedy. The brain is too much oppressed under its use, and the sedative effect is too profound.

Dr. Goodell remarked that the weight of authority was against the induction of premature labor, but was in favor of helping on the labor when once begun. With regard to ether, he stated that he had found it quite equal to the control of the convulsions, but not to that of muscular resistance, whenever the hand had to be passed into the vagina or into the womb.

Dr. Ingham asked what guide could be had to indicate to us when to bleed, other than the condition of the patient's pulse, etc.

Dr. Wilson replied that the great majority of these cases are in primiparæ. The age, fulness of pulse, and flushed face, will warrant us in bleeding. He bled, as a rule, and thought that the patients were generally relieved by the operation.

Dr. Goodell agreed with Dr. Wilson. An early, timely, and full bleeding, he thought invariably relieved intracranial pressure, whether caused by an effusion of blood or of serum. The tendency of the profession, during the last ten years, is toward depletion, if not as a curative, at least as a provisional, measure.

Dr. Ingham remarked that the point seemed to depend upon the cause of the convulsions; whether they were in consequence of the hydræmic condition of the blood, with œdema of the brain, or the result of uræmic poisoning.

Dr. Wilson remarked that in the seventy-five cases which he had seen, albuminuria was never absent. The proper way is to cure the albuminuria. It is therefore the duty of every physician to examine the urine of his pregnant patients.

STATED MEETING, HELD OCT. 2, 1873. DR. WM. GOODELL, PRESIDENT, IN THE CHAIR.

CASES OF CONGENITAL MALFORMATION.

Dr. Ingham exhibited for Dr. Allison a fœtus of about four

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and a half months, with the cord wound once around the right thigh, making a deep groove in the integument. Had the fœtus lived to maturity it would undoubtedly have been born with a congenital deficiency of the right leg. He also presented the ovaries taken from a woman of about 60 years in age, in one of which an apparent corpus luteum of pregnancy was present.

Dr. Cathcart exhibited a man with congenital deficiency of the hand. All the bones of the wrist were present, and two nodules of bone representing the fingers. On motion of Dr. Jenks, a committee was appointed to secure a photograph and report upon the case. Drs. Cathcart, Packard and Willard were appointed on the committee.

QUININE AS AN OXYTOCIC.

Dr. Packard related the following case: A lady had been confined twice; both labors tedious, the shortest thirty-six hours long. Three weeks before the expected time of a third confinement she contracted a cold, for which he gave her quinine, six grains per day. Thirteen days before time he was again sent for, and found the patient in labor. Two points here suggest themselves: first, would any quantity of quinine produce labor? second, would so small a quantity? On examination the os was not dilated, though some water had come away. At 10½ P.M. he was sent for, and found the os sufficiently dilated to admit the fingers.

No change took place for the next two hours.

At 2 o'clock Squibb's ether was given, the patient taking it herself. At 3.20 minutes the child was born, and the placenta delivered.

As in this case the ether had the effect of dilating the os uteri, this fact is opposed to the idea advanced some years ago, that the administration of anæsthetics lessened the expulsive pains. He thought this case showed that ether will in many cases positively promote the expulsive powers of the uterus.

Dr. A. H. Smith had used quinine in patients exposed to miasmatic influences in amounts of twelve to twenty-four grains daily, and had never seen any uterine action set up previous to labor. After labor has begun, then it may act as a stimulant, precisely as other stimulants. He had seen the uterine contractions increase in frequency and intensity, but not to any greater extent than we would have from the use of any diffusible stimulant. He had seen no tendency in quinine to produce premature labor.

Dr. Packard referred to the different susceptibilities of

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people to the use of quinine. With some, cinchonism is produced by a few grains. There may be peculiarities also in regard to the uterus.

Drs. Taylor and Yarrow expressed similar views in regard to the use of quinine. They never hesitated to give it to their pregnant patients when needed.

THE USE OF ETHER DURING LABOR.

With regard to the action of ether, Dr. Smith remarked that many cases present a condition of spasmodic contraction of the neck of the uterus, in which anæsthetics have an admirable effect. In these cases labor goes on with violent contractions, and the os uteri will not relax when the head presses upon it. Here ether will be of service by its property of inducing relaxation.

In other cases he thought that ether retards labor by enfeebling the power of the patient. In multiparæ, where the os is in a yielding condition, there is no reason to expect delay from that source; hence ether retards labor by impairing the voluntary contractions which are so useful. The patient cannot bear down, because consciousness is impaired and volition is absent. If the patient insists, we may use ether as a placebo, only upon condition that she will bear down.

The prolonged use of ether will impair the vitality of the fœtus. He had rarely seen a case in which the use of ether was prolonged, in which the child did not require some effort to revive it.

Dr. Goodell remarked that ether is of value in the first stage of labor in those cases in which the edge of the os is like a sharp knife, and so painful that the patient will shrink from the touch, and shriek out at every pain. In the second stage ether retards labor, and should not, as a rule, be given, except in such cases as an occipito-posterior presentation, where the pain is often intense and the woman unmanageable. He thought at one time that ether was a relaxer of the perineum. He does not think so now. The woman's pains are its best relaxers.

There is a liability to post-partum hemorrhage after the use of anæsthetics. The British journals are full of bad and even fatal cases of post-partum hemorrhage, due, he thought, to the almost universal use in that country of anæsthetics in labor. Severe flooding was in this country an unusual occurrence; death from it, extremely rare.

In regard to the use of quinine, Dr. Goodell had seen few

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cases in which he could trace increased uterine action to it. This idea of the uterine action of quinine is not confined to the physicians in this country. In Turkey and Greece, where ague is prevalent, the popular idea is that abortion is brought on by the administration of quinine. He thought that in these cases the abortion is the result of the muscular succussion, and visceral congestions of the disease, and not of any uterine action on the part of the antiperiodic.

Dr. Packard recognized the thin, knife-like edge of the os uteri as an indication for the use of ether, and in other cases agreed with Drs. Smith and Goodell.

Stated Meeting, held November 6, 1873. Dr. William Goodell, President, in the Chair.

CASE OF PUERPERAL SEPTICÆMIA.

Dr. Ingham exhibited the uterus and its appendages of a patient who had recently died from puerperal fever in the wards of the Philadelphia Hospital. The history of the case was interesting from its lack of similarity to the other cases of puerperal fever that the doctor had seen in the same wards. From the commencement, two days after labor, the tongue was dry and brown, the intellect was clouded, the temperature varied irregularly from 101° to 104°, and did not always accord with the rapidity of the pulse. The case had been treated with quinine, turpentine and Dover's powders. She, however, died on the eighth day. The post-mortem examination, made 32 hours after death, did not reveal any cause of death, except some general peritonitis. There was an ulcer at the posterior fourchette of the vulva, the seat of a grayish, diphtheritic-like exudation. The peritoneum around the uterus and ovaries was somewhat congested, but there was no parametritis. The brain was congested; the liver, kidneys, and heart were fatty.

This seemed to be a case of puerperal septicæmia, without any special local lesion.

Dr. Jenks remarked that this case was evidently one of septicæmia. It serves to explain the cause of some cases of sudden death after labor. In these cases this condition of extreme fatty degeneration is always found to exist. The attention of pathologists being drawn to this fact, the uselessness of the treatment of this form of puerperal fever by intra-uterine injections is evident. He had seen many cases in which the uterus was perfectly healthy, while, in others, false membranes lined its cavity. It was evident that, in the case before him, the septicæmia had its origin in the local ulcer.

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REPORT OF AN EPIDEMIC OF PUERPERAL FEVER.

Dr. J. S. Parry remarked that the present epidemic of puerperal fever appeared in Blockley Hospital four years ago, the first case occurring Jan. 15, 1870. It has been characterized by diphtheritic deposit about the vulva, vagina, uterus, and sometimes on other portions of the body. This deposit places itself upon slight abrasions or injuries occurring during delivery to the fourchette or posterior portion of the vaginal wall. The deposit is generally greater than in the specimen presented, sometimes lining the entire vagina and uterus.

In inflammations, not puerperal, as well as puerperal, we are almost always likely to have involvement of the parts around the uterus. We have intense pain about the lower part of the abdomen. If the uterus be examined, it will be found large and tender; from this point the swelling extends above the uterus, and involves the entire peritoneum.

This case differed from those which had occurred previously in the wards. At the outbreak of the epidemic it was associated with pneumonia and relapsing fever, then prevailing in the hospital. In the first stage of the disease, the tongue was covered with a whitish fur, but with a clean tip; in the second stage the tongue became dry, brown, the fur coming off in flakes. This case again differed in some particulars of temperature. Generally in this epidemic the temperature rises rapidly to 105° or 106° in a few hours. The temperature falls alike in good and bad cases. In unfavorable cases it falls rapidly before death, as if the patient was going to recover, and if this fall is not accompanied with other favorable symptoms, it portends death. The first indication of health is the morning remission; that gradually increases until it is like that of a quotidian intermittent. The tendency is then for the temperature to fall below the normal standard, to 97°. Sometimes there is collapse. In Dr. Ingham's case there was stupor.

The first case attacked at Blockley in 1870, was seized with acute puerperal mania, as was supposed. She died. It was found to be violent peritonitis. In four other cases he had noticed fierce delirium. This, however, is by no means characteristic of the disease. There is nothing more sudden than the changes in the condition of these women. In the morning they are cheerful and smiling, and seem to be well, yet they are consumed by fever; pulse rapid, features pale and shrunken, and death is written upon their foreheads. They sink and die without a struggle.

With regard to the treatment, Dr. Parry remarked that he

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had tried faithfully chloral, the sulphites, quinia, and all of the zymotic agents, and he relies upon the administration of opium in enormous doses, if necessary. One woman took 1½ grains of opium every two hours for several days. His experience with intra-uterine injections induced him to abandon them entirely. They seem to increase the local trouble and pain, and have been of no benefit whatever.

Dr. Ingham remarked that this was the first case in which he had seen the brown tongue. In several other cases the tongue had a uniform triangular space, at the tip free from deposit.

In all his cases, the temperature seemed to be controlled by large doses of quinia.

In one case in which the morning temperature was 103° and evening 102°, the administration of quinia and Dover's powder reduced the temperature from 103° to 101°. In this case up to six weeks there had been no change in the character of the tongue. Whenever the quinia is cut down the temperature rises. The other cases present the same general characteristics.

Dr. Ludlow asked whether the larger doses of opium produced sleep or merely relieved the pain.

Dr. Parry replied, both. He had two cases at one time, who breathed, the one, four times per minute, and the other, six. Both responded to pressure upon the uterus. They both recovered.

Dr. Wm. Goodell thought that too little regard was paid to the distinction between the autogenetic and the heterogenetic forms of puerperal disease. Hence the discrepancy of different observers in respect to the symptoms, course, and treatment. In the first class, the woman is poisoned by her own lochia. But, since these discharges become gradually offensive, and that not until many hours have elapsed after delivery, by that time the lesions of labor have begun to suppurate. But granulating surfaces are weakly absorbent; hence the poison is received into the system by small instalments, and these cases are therefore more manageable. On the other hand, in the heterogenetic variety the poison, in a high degree of intensity, is brought from without in direct and early contact with raw surfaces, while they are fresh, and, therefore, actively absorbent. This constituted a very fatal form of puerperal fever. He asked Dr. Parry how the women in the lying-in ward of Blockley were washed. In the Preston Retreat no epidemic of puerperal fever had yet taken place. This he partly attributed to the rule, that every woman is required to wash her own person, and that with a wad of oakum, which is immediately afterwards thrown

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away. He further made the patients get out of bed every day after the first, and sit in a chair while her bed was being made up; this facilitated the discharge of the lochia or of the clots which collect in the upper part of the vagina. By these means he believed that both the intrinsic and extrinsic sources of blood-poisoning were in a great measure avoided.

Dr. Parry replied that sponges were used; but that each patient had her own sponge.

Dr. Jenks remarked that it was evident that two forms of the disease had been referred to in the discussion of the evening. In the one form, septicæmia occurs on the second or the third day, accompanied by general pathological lesions as fatty degeneration—the whole body being affected. The other form is more local, and attended with parametritis, perimetritis, etc. This is generally seen in the crowded wards of a hospital.

NEW GALVANO-CAUSTIC BATTERY.

Dr. Bray exhibited a very compact form of galvano-caustic apparatus, and demonstrated its action by amputating the tail of a dog.

Dr. Chester Morris described a cheap form of battery which he had made, and which was very effective. It consisted of 4 oz. vials, each containing a piece of zinc and a piece of copper, connected by fours.

THE CORRECTION OF DIFFICULT PRESENTATIONS BY MANIPULATION.

Dr. Parry read a paper on manipulation by the hand in correcting difficult presentations.

He advocated the introduction of the hand (the patient being thoroughly etherized) with the back to the hollow of the sacrum, grasping the head of the child firmly, and then, by lifting the head above the brim of the pelvis, the desired movement can be effected. If the presentation is a face, it can be converted into a vertex presentation. If the position be occipito-posterior, it may be changed by rotation above the brim of the pelvis into an occipito-anterior position.

Dr. Packard thought that in a face presentation it would be easier to introduce the hand with the back anteriorly between the child's head and the pubis, and then grasp the occiput and bring it down. He alluded to a case in which he had succeeded in thus changing the presentation from a face to a vertex.

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STATED MEETING, DECEMBER 4, 1873. DR. WILLIAM GOODELL, PRESIDENT, IN THE CHAIR.

CASE OF DEATH FOLLOWING THE USE OF SPONGE-TENTS.

DR. DE F. WILLARD exhibited the uterus of a woman who had died after dilatation of the cervix uteri by sponge-tents. The patient had been married for eight years, but had never become pregnant. At one time, however, she suspected pregnancy, from having a six weeks' intermission between two menstrual periods, followed by a discharge of clots.

Before marriage she was regular, but afterwards the menses were scanty and painful. After he had introduced a pessary to relieve a slight anteflexion, the menses became more profuse and less painful. Offspring being earnestly desired, he introduced a sponge-tent to dilate the cervical canal, which was very narrow. The tent slightly dilated the canal, but as it closed up again, he introduced a larger one, which dilated the canal to the size of the little finger. This gave neuralgic pains, which she bore badly, although a stout-bodied woman. On a Friday he removed this tent and introduced a smaller one. Contrary to orders the patient worked the next day (Saturday) at the sewing-machine. On Sunday morning he found her with a tender abdomen, extreme pain, fever, etc. The tent was discovered in the vagina, having slipped out of the canal.

The patient was placed upon opiates and supporting treatment, but died on the ninth day.

On post-mortem examination a small amount of serous exudation was found in the cavity of the abdomen. The parietal layer of the peritoneum was covered with lymph. An abscess containing about an ounce and a half of pus lay on the left side of the uterus. There had been extensive inflammation of the pelvic viscera; probably, at first, peri-uterine cellulitis, and then general peritonitis.

In the discussion which ensued, Dr. Ellwood Wilson reported an analogous case. The patient was desirous of becoming pregnant; she suffered with painful menstruation from malformation of the neck of the uterus. He introduced a sponge-tent on a Thursday. Fearing insufficient dilatation, he introduced another on Saturday morning. This was left in until Sunday morning. She seemed so well that he gave her permission to go downstairs. She, however, not only did this, but in the evening went to church. In the night she had a chill—on Monday peritonitis set in—on Tuesday she died.

DR. H. LENOX HODGE also had seen a fatal case. He thought

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the use of tents was more dangerous than the profession believed. His case differed from the others in this particular, that the patient had been kept perfectly quiet after the introduction of the tents. The dilatation was desired by her husband, himself a physician, to facilitate the diagnosis of a suspected tumor. The first tent was introduced on Saturday, the second and third, on Sunday and Monday respectively. Before the removal of the last, she complained of acute abdominal pain, and died of peritonitis in four days after. An autopsy revealed a double ovarian tumor, with the Fallopian tube of the right side firmly adherent to the uterus.

Dr. J. L. Ludlow asked whether the danger in the use of the tents was not due to abnormal growths or to some other abnormal condition of the uterus.

Dr. Hodge replied that in two of the fatal cases mentioned the uteri were healthy, with the exception of a narrowing of the canal of the cervix.

Dr. McCall remarked that a condition of perfect health does not reduce the risk. He related a case in which peritonitis followed the repeated use of the sponge-tent; the patient fortunately recovered.

Dr. A. H. Smith remarked that the only fatal case which he could attribute to the use of a tent was one complicated with a morbid growth. In this case he had once dilated the uterus successfully, and removed the tumor with an écraseur. The tumor recommenced to bleed eighteen months afterwards. He dilated with sponge-tents, and scraped away the tumor, which was a soft mass, probably a fibroid degenerating into a medullary sarcoma. Peritonitis set in, and the patient died in three days. He never hesitated to use tents, even in his office. The great danger was from their repeated use, when the uterus is in such an irritable condition that septic matter is readily absorbed. He did not hesitate to use a second tent, but he feared a third. He always required his patients to use an antiseptic wash while the tents were being used. For sterility or for dysmenorrhœa he often put in a sponge-tent the day before menstruation, and kept it in throughout the flow.

Dr. Goodell had one case to record of death following the use of three sponge-tents. It was a case of intra-mural tumor, and whether the peritonitis was owing to the tents or to the manipulation with finger and sound by the five physicians present, he could not say.

He believed and thought that the history of fatal cases following the use of tents proved that it is not the first tent nor the first batch of tents passed into the cervical canal that does the

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mischief, but those put in at the second or third visit. The first tent irritates and congests the cervix; its removal abrades the mucous coat, and from this raw surface are absorbed the fetid discharges or septic material generated by the succeeding tents. Influenced by this opinion, he now first stretches open the canal by the uterine dilator, crowds in the largest sponge-tent possible, and then insinuates around it several small laminaria-tents. He thus tries to accomplish the necessary dilatation by one instalment of tents. The use of detergent vaginal washes during the presence of the tents he always enjoins upon his patients.

Dr. J. Cheston Morris stated that his experience led him to agree fully with these views. The first sponge-tent was free from danger, and so in a great measure was the second. It was the third introduction that, in his hands, had been followed by serious results.

UTERINE DILATORS.

Dr. Ellwood Wilson presented to the Museum of the Society a set of four uterine dilators, which he had used with great success. They were of varying sizes: the smallest dilated the canal to a width of three-eighths of an inch; the largest to one inch. He used one at a time, at intervals of three weeks, each dilatation occupying one-half minute of time.

Dr. Wm. Goodell stated that he had been using the uterine dilators with great satisfaction. He had cured several cases of dysmenorrhœa, anteflexion, and retroflexion. He expands the cervical canal to its utmost width at one visit, and uses but two dilators—one small one to tunnel out the canal, and a large one to complete the dilatation. The act of dilatation so straightens out the womb that flexions are much improved thereby. With this instrument he also keeps the cervical canal stretched open while using intra-uterine injections. He found it invaluable for preparing the cervical canal for the reception of a stem-pessary or of sponge-tents.

EPITHELIAL CASTS OF THE BLADDER.

Dr. J. H. Hutchinson presented two epithelial casts. The first was a cast passed from the vagina or the bladder of a young unmarried woman.

She had great irritability of the bladder. Casts were passed on two occasions. The second cast presented also came from a young unmarried girl. The patient had suffered from hemorrhage from the uterus, and was treated with vaginal supposi-

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tories of sulphate of iron, belladonna and opium, etc. She pulled this cast, as she alleged, from the urethra. Dr. Hutchinson asked whether these casts were common as a result of injections into the vagina and bladder.

Dr. Tyson had seen a cast of the vagina from the use of an injection of persulphate of iron.

Dr. Goodell referred to the fact that complete casts of the vagina are often shed after the use of strong astringent solutions. A strong solution of the nitrate of silver was perhaps more commonly followed by this phenomenon. With regard to casts of the bladder, he had never seen one, although many cases had been reported. The two specimens presented by Dr. Hutchinson seemed to him, from their history and their appearance, to be casts of the vagina.

Stated Meeting, January 5, 1874. Dr. Wm. Goodell, President, in the Chair.

APOPLECTIC PLACENTA.

Dr. Ingham exhibited a placenta with a firmly organized blood clot extending completely around it, and gave the following history of the case: Sarah F., aged 34, was admitted into Dr. Ingham's wards, for diseases of women, in the Philadelphia Hospital, on November 1st, 1873. She had miscarried about two years before, but since that time had been comparatively well, menstruating regularly until August, 1873, when her menses due on the first did not appear. This suppression lasted until the middle of October, without any special symptoms. At that time (October 12) she complained of a severe abdominal and pelvic pain, so severe that she was compelled to remain in bed for several days. Soon after the commencement of this attack she had a severe hemorrhage from the vagina, which, however, stopped without treatment. She also stated that three days before admission to the hospital she had had another hemorrhage; but when examined carefully after her admission no traces of it could be found. She was then believed to be about four months advanced in pregnancy. From time to time after her admission she had discharges from the vagina, closely resembling in character the amniotic fluid, but free, however, from blood. On the 20th of December she had another hemorrhage, accompanied with considerable pelvic pain. The vagina was tamponed, but without avail, for the hemorrhage continued, and on the 25th she miscarried. The fœtus was living, and about six months advanced in utero-gestation. The placenta came away

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without assistance. The entire border of the uterine surface of the placenta was occupied by a well-organized blood-clot, which was believed to date back to the October hemorrhage and illness. On lifting up the membranes this clot was found to have extended beyond the edge of the placenta, and was attached to the membranes by numerous small fibrous bands. The membranes were covered with patches of organized clots. The rest of the placenta was healthy. Dr. Ingham then stated that although he had seen a great many specimens of apopletic placenta, he had never seen so complete a clot, and had never before seen these fibrous bands, the very existence of which indicated that there had been a considerable inflammatory action following the hemorrhage.

Dr. Goodell remarked that he had never seen so firm a clot nor so well-marked an inflammatory condition. He believed that Dr. Ingham was correct in stating that the origin of this clot was coincident with the October hemorrhage.

CONGENITAL DEFICIENCY.

The committee appointed to examine the case presented by Dr. Cathcart[1] make the following report:

The young man is in appearance a fine, healthy, able-bodied man, 24 years old, muscular and well developed in every way, except the left hand, of which there is a congenital deficiency of the anterior portion.

The carpus seems to be perfectly developed, but the remainder of the hand appears wanting. There are but two metacarpal bones, which are placed one on either side, and to each is attached, but not articulated, a rudimentary finger. That upon the radial side seems to be the last phalanx of the thumb, and evidently contains bone; that on the ulnar side contains no bone. The rudimentary little finger is half an inch in length, the thumb being (three quarters) $\frac{3}{4}$ in length; both furnished with nails. There is no voluntary motion in either of these fingers.

The length of arm from the elbow to the carpus seems to be the same in both, but the right arm is very much more developed muscularly.

The pronators and supinators are all present, so are also the flexors and extensors.

The tendons of flex. carp. rad., flex. sublimis dig., palm. long. and flex. carp. ulnaris, are all distinguishable.

[1] See Transactions of the Society, reported in the May number of the American Journal of Obstetrics, page 160.

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The muscles of the ball of the thumb, and of the little finger are somewhat developed, but without power.

The metacarpal bone of the thumb is apparently present, and to it is attached the flex. carp. rad. Posteriorly this metacarpal bone articulates apparently with a bone situated nearly in the position of the os magnum; the trapezium and trapezoid being either absent or else fused with the metacarpal bones. The other carpal bones are all present. The fifth metacarpal bone is also present. The second, third, and fourth are wanting. The styloid processes on either side are normal.

It is the opinion of the committee that it is a case of deficiency of development, and that the projections are a rudimentary little finger and thumb.

JOHN H. PACKARD, M.D.
DEFOREST WILLARD, M.D.
J. H. CATHCART, M.D.

DR. WM. GOODELL, the retiring President, then delivered the annual address.

The following gentlemen were then elected officers for 1874:

President—Dr. Albert H. Smith.

Vice-Presidents—Dr. John L. Ludlow, Dr. John S. Parry.

Secretary—Dr. James V. Ingham.

Treasurer—Dr. D. Murray Cheston.

Curator—Dr. Wm. F. Jenks.

Publication Committee—Dr. W. Goodell, Dr. W. F. Jenks Dr. J. H. Packard, Dr. R. G. Curtin.

Council—Dr. Lewis D. Harlow, Dr. Robert P. Harris, Dr. James F. Wilson, Dr. Ellwood Wilson.

The following gentlemen were then elected Honorary, Corresponding, and Associate Members.[1]

Corresponding—Drs. Fordyce Barker, T. G. Thomas, J. Marion Sims, T. A. Emmet, E. R. Peaslee, Nathan Bozeman, Isaac E. Taylor, Abraham Jacobi, of New York; J. V. P. Quak-

[1] Extract from the Constitution, Art. XI.

SEC. 2. The Associate Members shall consist of practitioners of medicine residing in the State of Pennsylvania, but not in the city of Philadelphia, who will by their active co-operation, further the objects of this Society. They shall be entitled to all the privileges of the Society but that of voting, and on the payment of $2 per annum shall receive the Society's Transactions.

SEC. 3. The Corresponding Members shall not exceed twenty in number. They shall consist of residents of the United States of America, but not of the State of Pennsylvania, who are distinguished either as authors, teachers, or practitioners of obstetrics, or of the diseases of women and children.

SEC. 4. The Honorary Members shall not exceed twelve in number, and shall be chosen from distinguished foreign practitioners of obstetrics, or of diseases of women and children.

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enbush, of Albany; Charles Buckingham, of Boston; Wm. H. Byford, of Chicago; Theophilus Parvin, of Indianapolis.

Honorary—Drs. Robert Barnes, J. Braxton Hicks, of London; Alfred H. McClintock, of Dublin; J. Matthews Duncan, of Edinburgh; C. G. Fabbri, of Bologna; Carl Schroeder, of Erlangen.

Associate—Drs. Hiram Corson, of Conshohocken; Jacob Price, of West Chester; Trail Green, of Easton.

STATED MEETING, FEB. 5, 1874. DR. ALBERT H. SMITH, NEWLY ELECTED PRESIDENT, IN THE CHAIR.

THE PRESIDENT delivered an introductory address.

FATAL CASE OF PUERPERAL METRITIS.

DR. PACKARD exhibited the uterus and ovaries removed from a patient who died on the eighteenth day after delivery. The history of the case he gave as follows:

Mrs. K., æt. 44, was delivered of her ninth child, a girl, Jan. 8, 1874. The doctor had attended her on four previous occasions. Her labor was not a very severe one. The umbilical cord was not perfectly natural, having a sort of blood-stained portion (like cellular tissue, with serum deeply stained with blood infiltrated through its meshes), extending along it from the navel.

Mrs. K. did well until the fifth day, when her mind began to wander, and for a day or two she had decided puerperal mania, with much prostration, some hypogastric tenderness, and diminution of lochial discharge. Lactation was also deficient. Under nutrition, stimulants, quinine, tincture of iron, and local remedies, she improved very much, and seemed to be rapidly returning to her usual health. But on Jan. 26th, the eighteenth day from her confinement, having been out of bed for short periods for several days, she got up and was dressed. She felt so well that she undertook to walk about her room, having dined heartily an hour or two before. She was suddenly attacked with epigastric pain, and became collapsed. Only partial reaction took place from the use of sinapisms and stimulants, and she died about two hours after the pain came on.

Autopsy, made twenty-four hours after death, Dr. Winthrop Sargent assisting him. Body on ice; rigor mortis well pronounced.

Thorax.—Lungs healthy, but traces of slight tuberculous deposits at both apices. No pleuritic adhesions except above. Heart decidedly fatty; it contained fluid blood, as did also all the vessels except the iliac and ovarian veins on the left side, where there was a clot about five inches long.

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Abdomen.—Liver quite large and fatty. Gall-bladder distended with fluid bile; no gall-stones. Stomach much distended with entirely undigested food. Spleen, pancreas, and kidneys normal. Uterus about the size of a large butter pear. Fallopian tubes swollen and deeply congested. Ovaries white and hard, of normal size. On laying open the uterus, its tissue was soft, its lining membrane congested and velvety, its contents a thick, grumous, bloody liquid, almost black in color.

Under the microscope the muscular fibres of the heart were seen to be fatty in a marked degree.

It seemed as if death had been caused by oppression of the nerve-centres by the distention of the stomach, or by the failure of the heart's power when she over-exerted herself in walking about her room, or more probably by a combination of these conditions.

CALCAREOUS TUMOR OF THE BROAD LIGAMENT.

Dr. Ingham exhibited a small fibroid tumor of the broad ligament, that had evidently undergone calcareous degeneration. There was no clinical history connected with the case, as he had found the specimen in the post-mortem room of the Philadelphia hospital. The patient had died during an attack of acute pneumonia.

The tumor was over an inch in diameter, and had in its centre become firmly calcified. He thought that the specimen was interesting, as he believed that these tumors are rarely found in the broad ligament.

Dr. H. Lenox Hodge remarked that the specimen was rare and interesting. He had never seen a similar specimen. In this opinion other members concurred.

DONATIONS TO THE MUSEUM.

Dr. Ingham presented to the museum a pair of Sir James Y. Simpson's obstetric forceps, made by Young, of Edinburgh.

Dr. W. F. Jenks presented to the museum a valuable donation from Mr. Gemrig, consisting of thirteen pairs of obstetric forceps.

Stated Meeting, March 5, 1874. Dr. Albert H. Smith, President, in the Chair.

NEW FORM OF OVARIOTOMY TROCAR.

Dr. H. Lenox Hodge exhibited a *canula for tapping ovarian cysts*, and remarked that the two great improvements that have of late years been made in the operation of tapping consist in using an instrument which shall act as a syphon, and one which will allow the fluid to flow the moment that the puncture is

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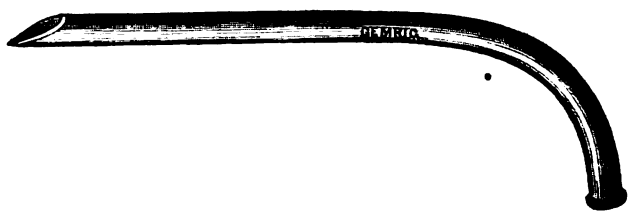
made. The syphon-action allows the patient to be tapped while lying on her back, renders unnecessary the use of compressing bandages, prevents the entrance of air into the cavity of the cyst, and allows the fluid to be withdrawn without wetting the patient. An instrument which allows the fluid to flow the moment that the cyst is punctured removes the pressure instantly, and thus prevents the cyst from splitting at the point of puncture. Mr. Spencer Wells's canula accomplishes these ends, but is complicated and expensive. The india-rubber tube attached to it must bend on itself more or less abruptly, and thus the calibre of its tube is interfered with, and the current of the fluid interrupted. The hooks to clasp the cyst are unnecessary, and the canula is too short in cases of multilocular cysts.

The annexed woodcut represents a most simple and yet extremely efficient canula.



It is made of steel, nickel-plated, and should be 10 inches long, and for thick fluids should be half-inch in diameter. One extremity slopes obliquely to a point, which should be sharp enough, with moderate pressure, to penetrate the cyst readily after the skin has been divided by a knife, and yet not so sharp as to wound any structure that might come in contact with it without pressure. The other extremity is curved, and has an elevated rim for attachment of the india-rubber tube. The india-rubber tube thus will hang without bending, and the fluid will pass freely without interruption. This curved extremity also serves as a good handle.

Dr. Hodge stated that he used this canula in the simple tapping of ovarian cysts and in operations of ovariotomy, and had found that its efficiency fully equals its simplicity. The puncture that it makes is semi-lunar in form and readily heals. The instrument maker should be careful to sharpen only the pointed lower half of the orifice. If this orifice were sharp around its whole circumference it might cut out a circular piece, as has often been done by Mr. Wells' instrument, when badly made.

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Dr. Harlow suggested that, as in multilocular cysts, there may be fluids of various densities, it would be impossible to introduce a sound through the curved tube to clear away the thickened fluid.

Dr. Hodge replied that the remedy for that was in the use of a flexible bougie. Practically, as soon as the fluid becomes so glutinous that it will not flow, the canula must be taken out. There are some cysts the fluid of which will not flow through any tube.

MEMBRANOUS DYSMENORRHŒA.

Dr. J. L. Ludlow exhibited a large piece of false membrane that had been cast from the uterus of one of his patients. Its passage through the cervical canal caused great suffering. Drs. Curtin, Betts, and Prall reported analogous cases.

Stated Meeting, April 2, 1874. Dr. Albert H. Smith, President, in the Chair.

ELONGATION OF THE CERVIX UTERI.

Dr. Jenks presented a specimen of elongation of the supravaginal portion of the cervix uteri. He remarked that the specimen was not a typical one, but was of interest in the study of the disease in its origin and incipiency. The body of the uterus was large. The length of the uterine cavity was 3 inches, and the cervix 2½ inches. The tissues were hard. Microscopically, there was found no true tissue of the part. The muscular fibre had undergone degeneration, and the intermuscular tissue was increased. There was no prolapse of either anterior or posterior vaginal wall. The uterus was slightly anteflexed.

In regard to the question of descent of the uterus in these cases, Dr. Jenks remarked that in hypertrophy of the intravaginal portion of the cervix, there is no reason why descent of the fundus should take place. In hypertrophy of the supravaginal portion, the weight of the organ may bring it down.

Dr. Goodell remarked that there was much difference of opinion as to the origin of this elongation of the cervix. He was not exactly satisfied that this case was one of the disease as we know it. In all the cases he has seen, the mucous coat of the cervix was thickened and very soft. He had never seen the cervical tissues so hard and dense as in this specimen. In regard to the surgical treatment of the disease, if the fundus uteri is not low down, the simple excision of the cervix is sufficient. If the prolapse is very marked or complete, then, in addition to the ablation of the cervix, must the valvo-vaginal

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opening be narrowed. He had never found a pessary that would permanently support the uterus in these cases until he tried Dr. Spooner's instrument, which had thus far proved successful in giving relief.

Dr. Jenks replied that he recognized the fact that there was a doubt as to the true nature of the specimen. The intravaginal portion was a specimen of hyperplastic growth. The case was one of hypertrophic enlargement of the supra-vaginal portion of the cervix.

Dr. A. H. Smith gave his plan for the treatment of procidentia uteri. After replacing the uterus, he introduces a pessary, and then sustains the pessary in position by sponges, saturated with an astringent, such as the glycerole of tannin. By constantly renewing this support for a while an astringent effect on the tissues is produced, which is sufficient to relieve the difficulty.

LUMBAR COLOTOMY.

Dr. Packard gave a detailed account of a case of lumbar colotomy, the operation being performed for the relief of a patient suffering from the almost entire closure of the rectum by the pressure of a large cancer of the uterus. The operation was successful, the patient expressing great relief from her previous sufferings.

He reported the case as one that might be of service to the members of the society in assisting them in relieving some of the sufferings in these cases of large uterine cancer. He thought, further, that it would help to remove the general impression that such an operation leaves the patient in a condition worse than death.

Stated Meeting, May 7, 1874. Dr. Albert H. Smith, President, in the Chair.

Dr. W. H. Parrish read the following history of a case of craniotomy. Rachitic pelvis, antero-posterior diameter $1\frac{7}{8}$ inches. Death at beginning of fifth week, from pyæmic puerperal fever.

During the night of March 18th, 1874, I was called to a colored woman, then in labor, and on whom it was stated craniotomy was required. The woman, aged 28, was an out-patient of the Bedford Street Mission Hospital, and had been under the charge of a female physician. I found her in a rickety wooden building in Middle Alley. The house was occupied by a mongrel crowd of whites and negroes in various stages of drunkenness, and exhibiting all the evidences of abject poverty, wretch-

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edness, and degradation. We were shown to the garret, a most dismal, forbidding den, so low that by persons of ordinary stature the erect posture could not be assumed. The leaky roof let in the wind and rain, and there was no fire or other means of counteracting the chilling effects of the weather. By the gloomy light of a smoky coal-oil lamp we saw our patient, a black dwarf, a fit denizen of the contracted apartments. With a couple of boxes for her bedstead, with a few straws, rags and old skirts for her bedding, and in the midst of filth and vermin, her surroundings could but seem to us not at all propitious for the performance of so serious and horrible an operation as craniotomy. Moreover, the woman was at full term, had been in labor for at least 36 or 40 hours; was restless, with a feeble pulse of 120 per minute, and with evident exhaustion. The external genitals were hot and exceedingly sensitive. The abdomen protruded markedly forward, and the uterus was deflected to the left. Her stupidity was such that no satisfactory history of herself could be given; she stating that on two previous occasions, two children had been taken from her, and that in neither was the head crushed.

We etherized her for examination. The examining finger came directly in contact with the sacral promontory. With the hand only, we took the antero-posterior of the superior strait to be not more than two inches, and its shortening to be due to the jutting forward of the promontory. There was evidently less relative diminution of the other diameters—especially of all the diameters of the inferior strait. The membranes were intact, but were then ruptured. The head, the presenting part, was in the left anterior position of the vertex, and above the pelvic brim.

The case evidently called for either craniotomy or the Cæsarean section, and the already much depressed state of the woman demanded an immediate operation. Her circumstances seemed to me to preclude the idea of Cæsarean section, and I at once decided on craniotomy.

Owing to a number of unexpected delays, the instruments for the operation did not arrive until 1½ hour after the rupture of the membranes. In the meantime, the woman—though aroused from the ether, and receiving morphia and whisky—was becoming more exhausted, so that before being again etherized for the operation, the pulse had risen to 130 per minute. The head, by external pressure, being steadied by Mr. Loder, I easily passed Harlow's perforator through the posterior fontanelle into the cranial cavity, and with it broke up the brain tissue. Then, with Meigs' embryulcia forceps, leaving the scalp when practicable, I tore off, piece by piece, the bones

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of the vertex, to accomplish which required each time considerable tractive force. Gradually, yet steadily, the cranial vault was thus removed, each attempt however, taking away scarcely more than could be included in the bite of the forceps. Having reached the base I seized the chin with the blunt hook and endeavored to bring down the face and thus make the base pass through edgewise. This I could not accomplish. The hook would tear its way out. Again I resorted to the embryulcia forceps, and now removed portions of the cranial base itself. In the meantime the woman's condition was evidently becoming a critical one. Her pulse became even more frequent, feeble and flagging. The coldness of her surface showed a much depressed vitality, and the tediousness of the child's removal was so great that we feared the patient might die, undelivered even.

Eventually the remnant of the head was drawn into the pelvic excavation, but the shoulders would not engage. Every hold either with hook or forceps would tear out, until the base was, as it were, in shreds. Now, however, by securing a strong fillet around the neck, and by taking a twist in this with the hook of Wallace's forceps, I succeeded, after a number of minutes and the exercise of all the force at my command, in delivering the woman of a male child which in its entirety would have weighed eight pounds most probably. The placenta was removed by Credè's method without difficulty and without bleeding. The woman was now aroused, and morphia and whisky administered. She soon rallied, the pulse falling to 110. She then confessed to having undergone a similar experience on two previous occasions, at the Philadelphia Hospital, and we then recognized her as Josephine Scott. (See American Journal of Obstetrics and Diseases of Women and Children, February, 1873, p. 646.)

The membranes were ruptured about 40 hours after the beginning of labor, the head perforated 1½ hour after the rupture of the membranes, and the delivery effected two hours after the perforation of the head.

As the subsequent treatment, we directed the daily administration of quin. sulph. gr. xii., and morph. sulph. gr. ss., with nutritious and easily digested diet and the careful use of stimulants. It was easy to give directions but with none around her willing or fitted to perform the duties of nurse, it was impossible to have her merest wants attended to. She repeatedly passed her urine in bed because no one would hand her the needed vessel, and on the second night she partook of a hearty meal of fat pork.

First and second days.—Temperature 100° F. Pulse 110;

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abdomen slightly tympanitic, but without pain save on pressure on the uterine body; urination normal.

Third day.—Anxious, tremulous. Pulse 125, feeble, irregular and fluttering. Skin hot and dry. Abdomen quite tympanitic; no increase of pain. Urination normal. Directed, in addition, tr. digitalis and castor-oil mixture.

Fourth day.—Had a "flooding of water," urine dribbling from her. Diagnosed vesico-vaginal fistula. Bowels moved; tympanitis less. Pulse improved.

Sixth day.—A very cold one. Woman in severe rigor, shaking the boxes beneath her. Evening temperature, 103° F.

On different days the rigors repeated themselves, the temperature ranging from 100° F. to 104° F. Diphtheritic ulcers appeared on vulva and along the vagina, though daily syringed with a solution of potassic permanganate. The left iliac region became painful on pressure, indurated, but fluctuating a few days prior to death. The uterus remained deflected to the left, as if held by old inflammatory changes.

It was impossible to secure the proper and regular administration of nourishment or medicine. Exhaustion increased, and death supervened on April 17th, a little more than four weeks from the day of delivery.

Autopsy 36 hours after death. Emaciation marked. In the left iliac region a distinct fluctuating tumor. No general peritonitis. Evidences of former, but none of recent perimetritis. Numerous fibrinous bands extended from the uterus especially across Douglas's *cul-de-sac;* found also tumor on the anterior surface. Marked thickening of left broad and round ligaments.

The left iliac region, beneath the peritoneum, filled with purulent fluid, amounting to probably a quart. Cellular tissue of that side, where not completely broken down, infiltrated with pus.

Same condition of cellular tissue around the vagina.

Distinct from the sub-peritoneal abscess, was another—a subperiosteal one. Between the two there was no discernible communication. The latter abscess existed beneath the periosteum, lining the posterior surface of the pubic bones. The inter-articular fibro-cartilage of the symphysis had entirely disappeared, its place being supplied by a gelatinous purulent fluid.

The pelvis is distinctly kidney-shaped at its brim. The sacral promontory jutting forward so as to be the essential cause of the deformity. The outlet is not greatly diminished, nor is it ordinarily so in a rachitic pelvis.

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The measurements of a dried *ligamentous* preparation of the pelvis are:

Superior Strait.		*Inferior Strait.*	
Antero-posterior diameter..	$1\frac{7}{8}$ inches.	Antero-posterior diameter...	3 inches.
Transverse diameter.....	$4\frac{5}{8}$ "	Transverse diameter.....	$3\frac{5}{8}$ "
Oblique left posterior.....	$3\frac{3}{4}$ "	Oblique left posterior.....	$3\frac{1}{4}$ "
Oblique right posterior.....	4 "	Oblique right posterior.....	$3\frac{3}{4}$ "
Left oblique conjugate.....	2 "		
Right oblique conjugate....	2 "		

The difference in the oblique diameter of both the brim and the outlet is due to the right sacro-iliac synchondrosis being on a plane posterior to that of the left.

Depth of symphysis pubis, with triangular ligament.	$1\frac{3}{4}$ inches.
Depth of pubic arch.....	2 "
Shortest distance from tip of coccyx to promontory of sacrum.....	$3\frac{1}{2}$ "
Following curve of sacrum.....	$4\frac{3}{8}$ "

The three lower vertebræ were left attached to the pelvis, and present marked borders. A vertical line touching the outer surface of the third lumbar vertebra, the pelvis being held in the erect position fell precisely half an inch in front of the crest of the symphysis pubes.

The femora were removed and left attached to the pelvis. Both presented marked anterior curvature. The right larger than the left; the right being 10 inches from great trochanter to lowest point of external condyle; the left, 9 inches between the same points.[1]

Death was evidently due to pyæmia. Had the surroundings been at all hygienic, or could the woman have been, at any time after I saw her, removed to a hospital, she would probably have recovered. On two previous occasions craniotomy was performed on her, in 1869 by Dr. Girvin; in 1872 by Dr. Parry; each time at the Philadelphia Hospital. Dr. Parry reported his case in the *Transactions* of this Society of last year, making it the basis of his excellent article, entitled "Craniotomy and the Cæsarean Section in small pelves." (See this JOURNAL, February 1873, p. 644.)

To Mr. Percival Loder I am much indebted for faithful and judicious assistance during the entire treatment of the case.

After reading the history of this interesting case, Dr. Parrish presented the pelvis and attached bones to the Museum of the

[1] The pelvis and attached bones are now in the Museum of the Obstetrical Society of Philadelphia.

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Society. Owing to the absence of Dr. J. S. Parry, who delivered Josephine Scott on a previous occasion, the discussion on this paper was postponed.

Dr. Goodell then gave the following history of a case of

VESICO-VAGINAL FISTULA, CURED BY LOCAL APPLICATIONS.

The patient, a primipara, was an undersized woman, with a flat pelvis. The head was large, and the vertex presented in the right occipito-posterior position. Not realizing the difficulties of the case, and wishing to put to the test Simpson's forceps, which, he had lately imported directly from the original manufacturers in Edinburgh, he applied it, as recommended by its advocates, in the transverse diameter of the pelvis. After very hard traction of about an hour's duration, the head entered the excavation, but in proportion to its descent the vertex rotated more and more towards the sacrum. He therefore removed Simpson's forceps and applied Hodge's to the sides of the child's head. After half an hour's further hard traction, he succeeded in rotating the vertex anteriorly, and in delivering the woman of a lusty child weighing eight pounds and fourteen ounces. By the passage of the shoulders the perineum was torn to a considerable extent, but three metallic sutures were at once put in, and it, in the end, reunited perfectly. On account of this laceration the bladder was emptied by the catheter for five days. On the tenth day the urine began to dribble away from the vagina. Upon an examination, he found, to his dismay, a slough as large as a silver quarter, near the neck of the womb, and in it an opening communicating with the bladder. He at once cauterized the whole slough with fuming nitric acid; repeated this application three days later, and on the intermediate and following days applied a solution of one drachm of nitrate of silver to one ounce of water. For five days all the urine escaped from the vagina. It then began partly to be passed from the urethra, in very small quantities at first, but daily in increasing amount. At the end of five days more, the opening, much to his delight, closed up entirely. The lessons he derived from this instructive case were threefold: To be more charitable in future to those physicians who are unfortunate enough to meet with cases of vesico-vaginal fistulæ in their practice; to regard these fistulæ, when of medium size, as curable in their acute stage; to discard Simpson's forceps as a dangerous instrument in operations at or above the brim.

Dr. Ingham doubted, whether, with all this manipulation, the injury should be attributed to the use of Simpson's forceps.

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He could not see why this forceps should be more injurious than Hodge's, if the traction were made in the direction of Carus's curve.

Dr. Goodell replied, that he by no means attributed the injury directly to the blades of Simpson's forceps, but to the fact that by this forceps hard and continuous traction cannot be made in the curve of Carus. From its peculiarity of construction this instrument admits of linear or direct traction alone, which necessarily subjects the pubic structures to very great pressure. But when the woman lies on her back, by firm downward and backward pressure upon the lock of the Hodge forceps, and by raising the handles proportionately, traction can be made in the curve of Carus, and away from the pubes, thus relieving its structures from the brunt of the pressure.

Dr. C. H. Thomas asked where the fistula was seated; and whether it would not have been wiser to introduce stitches at once, rather than trust to local applications.

Dr. Goodell replied, that the opening into the bladder was in the centre of a sloughing surface, which could not have held the stitches. It was situated about half an inch from the juncture of the anterior wall of the vagina with the cervix.

Dr. A. H. Smith, thought that the injury was due, not to the kind of forceps used, but to its application in the transverse diameter of the pelvis. The blades are intended to be applied to the sides of the child's head, whatever the position, and when thus used, the mother's tissues are protected by the bulging of the child's tissues through the fenestræ.

CANCER OF THE CERVIX UTERI.

Dr. J. V. Ingham exhibited a specimen of medullary cancer of the cervix uteri, with the following history:

Ann D., aged 40, widow. Married at 18. Has had five children, the labors were easy and she recovered perfectly from each one. Nine years ago she miscarried, and since that time she has been irregular in her menstrual periods, but recollects no other trouble. In October, 1873, a profuse hemorrhage from the vagina occurred, and on the 31st of that month she was admitted to the surgical wards of the Philadelphia Hospital. During her stay in these wards she had profuse hemorrhage from time to time, having, as she states, lost bucketsful of blood.

On the 3d of March, 1874, she was transferred to the ward for the diseases of women. At that time she had a continued hemorrhagic discharge, which, however, was soon checked by local applications of liq. ferri persulph. When Dr. Ingham took charge of the ward, April 1st, he found her greatly

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emaciated and extremely feeble, but losing no blood. She did not complain of any pain or abdominal soreness, and was positive that she had never had any; the so-called cancerous cachexia was well marked. A few days laters he died, apparently from œdema of the lungs.

On making the post-mortem examination the cervix uteri was found to be the seat of a medullary growth, which had destroyed it. The adjacent tissues were healthy. The lungs were markedly œdematous. The liver and kidneys had undergone considerable fatty degeneration. The cause of death was evidently an acute œdema of the lungs, the patient having been greatly weakened by her previous hemorrhages. The doctor thought that the interesting point in this case was the small amount of destruction of tissue, and at the same time the long-continued and profuse hemorrhages. It was also interesting, he thought, to notice the entire immunity from any pain, abdominal or pelvic.

Dr. Charles H. Thomas then related the following history of a case of

ANTE-NATAL DEVELOPMENT OF NINE TEETH.

This case was brought to my notice by Doctress Estelle A. Benedict, then a student of medicine at the Woman's Medical College of Pennsylvania, who informed me that she had attended a woman in her confinement (Dec. 28th, 1873), and that the child, which was normally constituted otherwise, had nine (9) perfect teeth when born. The child was first visited by me when it was four weeks old (January 27th, 1874), in company with Dr. James S. Myers, he having seen it previously, and very soon after its birth.

We found an emaciated male infant, evidently suffering from marasmus and near its death, having five (5) teeth in place and four (4) distinct conical fleshy papillæ, from which a corresponding number of teeth had already been removed. These latter are herewith presented, being two incisors and two molars. It is worthy of note, in passing, that these teeth loosened of their own accord, and not from the pressure of others from beneath. In addition to these, a number of small whitish nodules could be seen and felt along the line of the gums, above and below, lying underneath the mucous membrane, and evidently marking the location of all the other deciduous teeth. No change had taken place in these, as I am informed, up to the time of the child's death, which occurred at the sixth week.

The mother complained of the bite of the child while nursing as being very severe from the first, and despite much urg-

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ing to the contrary, on the part of her medical attendant, she entirely discontinued putting it to the breast before it was three weeks old.

Whether or not an instinctive or superstitious shrinking from close contact with such a monstrosity contributed to this conduct is not certain, but it seems very probable.

Certain it is that the idea of horror is not infrequently associated with such cases, and in this connection these lines, from Richard III., are not without a certain interest:

Queen Margaret to Duchess of York.

"Forth from the kennel of thy womb hath crept
A hell-hound, that doth hunt us all to death;
That dog that had his teeth before his eyes."

Dr. Curtin recalled two cases of ante-natal teeth which occurred in his practice. The first mentioned had the two front upper incisors and two below. The child died when about three weeks old.

The second had the two upper front incisors. These teeth dropped out when the child was about two months old, and were replaced by the ordinary deciduous teeth, which he was informed is usually the case with this kind of teeth.

There is a superstition among nurses, that the child that is born with teeth dies early.

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ON COMPRESSION OF THE FŒTAL HEAD BY THE FORCEPS AND CEPHALOTRIBE.

By HUGH L. HODGE, M.D., Philadelphia.

PHILADELPHIA, *November* 5, 1874.

GENTLEMEN OF THE PHILADELPHIA OBSTETRICAL SOCIETY:

In a letter addressed to this Society, dated November 6, 1872, my father promised to prepare a paper upon the compressibility of the fœtal head by the forceps, and upon the great value of cephalotripsy and that form of cephalotribe which would render it most useful as a compressor, and also as a tractor.

He at once began the preparation of this paper, and continued to work upon it until within two days of his death, in February, 1873. Among his final directions, in the last hour of his life, he told me to take charge of it and complete it. This I have endeavored to do in his own words, by extracts from what he had already written and published on the subject. The article, prepared in this manner, is, I think, of more value than it could have been made in any other way, because it contains nothing that is not his own thought expressed in his own words. But it is only a fragment of what it would have been if he had lived.

Respectfully yours,

H. LENOX HODGE.

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"One the most dangerous errors relative to the forceps that a student could take up, would be the opinion that the forceps is, in its very design, a compressive instrument. It is not so; the forceps is not a pincers, it is an extractor—it is a real tire-tête; and I think it ought to be established as a principle in obstetrics, that where there is not space enough for the descent of the head without the forceps there cannot be produced a due proportion by merely squeezing the head down to the required dimensions by such an instrument." (Meigs' Treatise on Obstetrics, 4th edition, p. 528.)

This was the earnest teaching, both written and oral, of my excellent friend, the late Chas. D. Meigs, M.D., Professor of Obstetrics in Jefferson College. It is not his alone, but seems to be the universal opinion of British practitioners since the time of Smellie, if we can form an opinion from the size and dimensions of the various forceps which have been, and still are, in use in the British domains. Very slight compression can be made upon the head even when the handles are brought in contact. Obstetricians are afraid to trust the novitiate, or even themselves, in the use of an instrument capable of diminishing any of the diameters of the head. Many of the practitioners of our own country practically adopted the same opinion by employing the English forceps with some slight modifications.

The fear of undue compression influenced the mind of Dr. Foster, who, in 1781, recommended "a stop, or kind of nail, to pass from one handle to the other at their extremities," for the "excellent purpose of preventing too much pressure upon the head of the child," etc. ("Principles and Practice of Midwifery," by Edward Foster, M.D. Lond., 1781). It is singular with what pertinacity this idea has been maintained among the English-speaking people, for we find that the late Prof. Elliott, of New York, recommends "a sliding pivot" on his modified forceps, not being willing to trust his own prudence and judgment in the use of his own instrument.

This opinion as to the impropriety of compression, sanctioned by some of the best obstetric authorities, is, I believe, fundamentally erroneous, and has greatly restricted the practical use of the most invaluable of all obstetric instruments, the forceps. It is not surprising, therefore, that Prof. Barnes, as late as 1870, affirms that the English forceps "has declined" since the time of Denman and Smellie, and that the highest compressing power

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of this instrument has not been developed. "Indeed the present forceps are not much better than Chamberlen's."

My observations upon this important subject will be best arranged under distinct propositions.

FIRST.—*The vault of the fœtal cranium is so constructed as to render it capable of compression.*

This is well known and acknowledged. It depends not merely on the interosseous spaces termed fontanelles, but also, upon the arrangement of the commissures of the cranium, improperly called sutures. The edges of the several bones are not serrated, but are simply in contact, and are connected by a fibro-cartilaginous tissue possessed of some elasticity, and at the same time very strong. The bi-parietal commissure is extended forwards between the two portions of the os frontis to the nose, and is usually termed bi-frontal. There is often, also, to be observed, a transverse fissure across the base of the occiput, behind the foramen magnum, and may be termed the bi-occipital commissure. It is evident, therefore, that a very large proportion of the head—indeed, all that part above a line drawn from the base of the occiput over the external meatus auditorius to the orbital ridges—is capable of great diminution in size, simply from its anatomical arrangements.

SECOND.—*Compression does actually occur in Labor.*

This also is acknowledged by the most sceptical. It is observed in every case of labor to a greater or less degree where the head meets with any resistance in its transit, whether from the rigidity of the muscular and other tissues or the disproportion between the head and pelvic canal. The alteration of the form of the head varies according to the presentation and other circumstances. In the usual vertex presentation the cranium is diminished in its lateral direction, and increased in its length. The first is evidently owing, as observation proves, to the riding of one parietal bone over the other, and also of one portion of the os frontis over its fellow. The elongation of the occipito-mental diameter, which, Dr. Barnes affirms, may be to the extent of one inch or more, is not so easily explained. Some slight motion may possibly exist at the connections of the os frontis, and the malar and nasal bones may allow of some recession of

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the os frontis. Still more may be gained by the backward projection of the occipital bone, permitted by the bi-occipital commissure. These, however, do not appear to be sufficient to explain the elongation of the occipito-mental diameter from five to six and six and a-half inches, as has been alleged. I suspect, however, that the elongation of the head is more apparent than real, owing to the tumefaction of the scalp from pressure, effusions, etc. As to the lateral diminution of the head, it is usually stated from three to six lines. Baudelocque's well-known experiments upon heads of stillborn children would limit it to three or four lines; but, as well-developed fœtuses have been born alive, where the conjugate diameter of the brim has not measured more than three inches, we have a right to infer that the bi-parietal diameter would be lessened to six or eight lines. Much depends upon the degree of ossification of the head, and the peculiar circumstances of the labor.

THIRD.—*Compression of a fœtal head at term can be effected to a great extent with safety to the child.*

It is impossible to determine *à priori* what are the safe limits. Much depends on the compressibility of the cranium. Much upon the degree of pressure applied, much upon the intermittent character of the pressure, and much on the time which is expended. Hence, children are often born alive under apparently the most unfavorable circumstances, and sometimes they are stillborn, when great hope is entertained of their safety. The experience of the profession has indicated that children at term may be born with safety by the natural efforts of the mother, when the antero-posterior diameter of the superior strait measures three inches, under which circumstances, efforts should always be made for its preservation. If the diameter be less than three inches, no reasonable hope can be entertained, unless the head be imperfectly ossified, as in premature children.

FOURTH.—*The death of the fœtus during labor from pressure, results from two causes—1st, the diminution or suspension of the functions of placenta and funis, and 2d, from the cessation of the circulation generally.*

This last is often a sequel of the first, but as it is accompanied with different phenomena, should be considered separately.

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It is usually asserted that the death of the infant is owing to pressure upon the brain, *per se*, as the primary and essential cause. This cannot be admitted, for it is well known that the life of the fœtus in utero is almost entirely organic or vegetable. The brain, so all-important as the centre of the nervous system after birth, is really of no value to the fœtus. Its organic actions, its growth and nutrition can be carried on as well without as with the brain. This is fully demonstrated in the case of an anencephalus or an acephalus fœtus. There is in the Obstetric Museum of the University of Pennsylvania, a fœtus almost twice the size of its twin, which was perfect, and yet there were no head and no upper extremities developed. In addition, experience proves that, no matter how much pressure is made upon the cerebral mass during labor, even for a long time, the child may survive, provided there be no solution of continuity of the tissue and no internal extravasation.

The essential cause of the death of the fœtus is a suspension of its respiratory function. This, physiologists have established, resides not in the lungs, but in the placenta, while the funis or cord is the conduit by which impure and pure blood is carried to and from the placenta. Experience also clearly demonstrates that the interruption of this important function is as dangerous to the fœtus as a cessation of breathing to the adult. The child perishes in a few minutes if its connection with the parent be interrupted. Many restrict the time to two or three minutes. Dr. Barnes and other good authorities affirm that five minutes is the extreme limit.

It is the general declaration that pressure upon the cord for any length of time is fatal. This is the truth, but only part of the truth. Pressure upon the placenta, or the separation of this organ from the uterus, is equally the cause of death. In pelvic deliveries, and also in cases of prolapse of the funis, accoucheurs direct various measures to protect or relieve the cord from pressure, which directions are often valuable. But in cranial deliveries we have no reason to suppose that the cord is often subjected to pressure, and yet in tedious and severe labors the child often perishes. The explanation of this circumstance is, that after the membranes have been ruptured, the whole placenta is compressed between the body of the child and uterus. A flat body of some eight or nine inches in

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diameter is thus exposed to pressure from the powerful contraction of the uterus, augmented by spasmodic contractions of the abdominal muscles. All are familiar with the great force of these powers, sufficient almost to paralyze the hand of the accoucheur when within the cavity of this organ, or even, in some instances, to cause a rupture of its walls. We have a right, therefore, to presume that in most cases during the second stage of labor, there is at least a partial interruption to the circulation of blood, and therefore to the respiratory functions of the placenta. That death does not ordinarily ensue is owing to the admirable provision of nature that the expulsive efforts of the parturient woman are intermittent, not continuous. If, however, the pains should be severe and persistent, and the labor tedious, death does result from the interruption of the functions of the after-birth. This affords us an explanation why the secale cornutum, which excites such permanent and violent contractions of the uterus, has proved so detrimental to the fœtus.

There is still another circumstance why, in some cases, the infant perishes, which has been strangely overlooked by even the best authorities in the profession. It is the separation of the placenta from the uterus before the head is delivered. This may be occasionally noticed in cases of vertex presentation, where from a blow or fall the placenta has been detached with or without hemorrhage; also in cases of placenta prævia. But it is chiefly in cases of pelvic deliveries where the danger to the fœtus from this cause is most imminent. Practitioners, even the most distinguished, such as Professors Simpson and Barnes, appear to be satisfied that the child will be comparatively safe if the cord can be removed to the side of the infant's face, or tucked away in the notch on each side of the sacral promontory, forgetting that when the head is fairly engaged in the superior strait, the uterus is as completely emptied as it is when the child is born. It is contracted to a small size above the head of the child, and the placenta very universally separated from its walls. This seems to me by far the most frequent reason why children so often perish in pelvic deliveries, and why so little confidence should be placed in attempting to remove the cord from pressure.

The changes which take place in the child from the suspen-

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sion of this respiratory process are very analogous, perhaps perfectly identical with those of asphyxia in the adult. In all cases of tedious labor, the surface of the child, and especially its face, is of an unusual blue color. In proportion to the interruption of the placental functions, the blue tinge deepens, and in confirmed cases, the whole surface is purple, the eyes are injected, the external tissues tumefied, which tumefaction often extends to the neck and the chest, while the hands and feet are often pallid and cold. The tongue and lips are also cold and blue, the pulsations of the heart are feeble, and that of the cord partially or completely suspended. This has been termed the apoplectic condition of the new-born infant, but is in reality a case of asphyxia or venous engorgement from suspended placental functions. All the phenomena will rapidly disappear if the pulmonic respiration be re-established. In bad cases, more permanent and serious evils may result from effusions of serum or pure blood, not only into the subcutaneous tissues, but also into the cavities of the cranium and thorax; hence the functions of the brain, heart and lungs cannot be established, or else are so imperfectly excited that the child remains blue, with an imperfect circulation and oppressed respiration, with great dullness, and with feebleness of its muscular powers, usually perishing after a few hours or days. It is in this way that children so often die during labor or immediately afterwards.

A second cause of death to the fœtus is the suspension of the circulation. The child is born showing few, if any, marks of vitality, with no pulsation in the cord, and seldom more than a feeble thrill of the heart. The limbs are motionless, the face and whole surface of the body pallid, the features sunk, and little or no impression can be made upon its sensibility. It has been termed the anæmic condition of new-born children, but I have always regarded it as the sequela of prolonged asphyxia. It arises from the same causes, and it is possible that it may be, in a great degree, dependent upon such continued pressure from the uterine powers, that the circulation in the placenta and child is completely arrested.

A practical deduction from these facts is all-important. The practitioner, in all his operations, should never forget that all pressure on the child's head or body should be intermittent;

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that the placental and circulatory functions should not be suspended; and, secondly, that no hope but that arising from speedy delivery can be entertained for the safety of the child when the placenta is detached from the uterine surface.

FIFTH.—*Compression upon the head of the fœtus can often be made by the forceps, not only with safety, but with great advantage during labor.*

The safety of delivery by the forceps is a point settled beyond controversy. It is established by universal experience. It seems almost equally incontrovertible, that in every forceps delivery more or less pressure is made by the instruments very generally employed in Europe and America. For in them the fenestræ are so small, or of a shape so peculiar, that the parietal protuberances cannot project through them, hence the thickness of each blade must be superadded to the measurement of the transverse diameter of the head, and necessitates, therefore, sufficient pressure on the head for their accommodation.

Again, after the instrument is applied, the handles must be approximated, in order to have a secure hold, as otherwise the blades would vacillate, or even slip upon the scalp of the child. When Dr. Meigs directs that only one blade should be acted upon at a time, carrying it from one side to another, so as to pry out the head, it is manifest that the head is compressed between that blade and its fellow, or pelvis upon the opposite side. And when Prof. Barnes affirms that no pressure should be made by the forceps, that they should be used simply as tractors, it is still evident, that as the head is drawn from a larger to a smaller space, the compression upon the sides of the pelvis, which necessarily results, is enhanced, not only by the thickness of the blades, but in proportion to the tractive power exercised.

Compression being thus always more or less effected by the forceps, the important question arises to what extent it can be carried with safety to the infant. It has been already said that this cannot be possibly determined, as the limit must vary in different cases.[1] Experience, however, shows clearly that

[1] Dr. Barnes would limit the use of forceps to a conjugate diameter of three and a half inches or more.

Baudelocque restricts the degree of compression of the head to one-fourth

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children may often be saved by means of the forceps, when the passages are contracted and the head arrested. By this valuable instrument I have often delivered children with safety in women who in previous labors had lost their infants, and in some cases when there were but three inches in the conjugate diameter of the brim. The experience of many other practitioners coincides with my own.

In modern works, therefore, it is a settled principle that a perforator should not be employed until a previous attempt at delivery has been made by the forceps or by version. Of course, when the contraction is so great, the prognosis must always be doubtful. Many children perish and many are preserved. No statistics have established the proportion of safe deliveries under these untoward circumstances, as the condition of the patient and child, the time of operating, the skill of the operator, the instrument employed, and other conditions vary exceedingly.

Perhaps no one circumstance is of more importance than the construction of the forceps. Even the best in general use are lamentably deficient in some one or more points. Most of the English forceps are too short. Their long forceps, so called, have fenestræ so small that they occupy space—that is, the thickness of the blades must be superadded to the diameter of the cranium, while they are incapable, even when the handles are closed, of making any effective compression. They are, therefore, totally inadequate to accomplish delivery when the short diameter of the strait measures but three inches, as the measurement from one blade to the other is, very generally, nearly three inches. I do not wonder, therefore, that the experienced and judicious Dr. Burns ("Burns' Obstetrics," by Dr. James, Phila., pp. 429, 30) observes, that it might not be possible, in a greatly contracted pelvis, to withdraw the forceps if applied. It may be added that all such attempts must be exceedingly dangerous to the mother's tissues during the passage of the head. No wonder, then, we read of such horrible laceration of the uterus and vagina, accidents which

inch; Velpeau, Osiander, and Siebold to one-half inch. Joulin and Chassagny made many experiments, proving that the head can be moulded more by the forceps than is commonly believed. Delore thinks compression of the head by the forceps may be harmless, if exerted over a large surface.

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ought *never* to occur with a well-constructed instrument. The forceps of Dr. Haighton and those of Prof. Davis differ from the generality of British forceps in having large fenestræ, so that when properly applied they do not occupy space. The former instrument was, on this account, strongly recommended by Prof. James, of the University of Pennsylvania, and the latter by Prof. Meigs, of Jefferson College, but both instruments are confessedly inadequate for deliverance at the brim of the pelvis. Dr. Davis and Dr. Meigs would both restrict their use to cases where the head is *within* the pelvis, and the former invented a second instrument of a peculiar structure for the head retained at the brim.

The forceps generally used on the Continent of Europe are capable of making compression, and hence, if we may judge from the reports given, are far more efficient than the British. When the head is at the superior strait, Baudelocque's instrument, especially as modified in this country by Dr. Dewees, is certainly one of the most powerful and valuable devised,[1] and by it many children have, doubtless, been saved who otherwise would have perished. It is suitable to all obstet-

[1] The forceps used in Great Britain and often in this country, have short handles compared with the long handles of those used in France. It is evident that the longer the handle, the greater power as a lever, hence, its efficiency is greatly augmented and in cases of great difficulty much force can be exerted by very little muscular effort. The short handle, on the contrary, under similar circumstances demands much muscular effort, which not only induces fatigue, but renders it impossible to be very accurate or delicate in the application of the necessary force, and so we read of, not only the exhaustion produced in the operator, but of the slipping of the forceps, endangering the tissues of the mother and child and imperilling the equilibrium of the accoucheur. The power of this valuable instrument as a lever has been dreaded as much as its compressing power, forgetting the fundamental maxim *arte non vi*, and that the practioner should be governed by his science and judgment, and not by the artificial restraints imposed by the instrument.

The latest account we have seen showing the inefficiency of the English forceps, as to their powers as levers and compressors, is reported in the Edinburgh Med. Jour., Feb., 1873, as detailed in the Obstet. Soc., Dec. 11th, 1872. The forceps had been applied three times in a case of contracted pelvis; there were two gentlemen in attendance. The one being exhausted by his efforts yielded the instrument to his companion, who, after great exertion, advanced the head very little. Perforation, hooks, etc., were resorted to, and the fifth effort was made with the forceps, by which, with much difficulty, the head was extracted. The operation was regarded by the members of the Society as being very well executed, especially as the woman recovered.

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ric emergencies. By the advice of Prof. Dewees, I used it advantageously for many years, but found that it had its defects, three being very important ones. The first was, that when the blades were passed high up in the pelvis, the orifice of the vagina was unduly stretched by the divergency of the blades near the lock, and hence there was danger of injuring the perineum, especially in primiparous patients. The second and more important defect was the small size of the fenestræ, so that the parietal protuberances could not project through them; hence, owing to the thickness of the blades, undue encroachment was made upon the cavity of the pelvis and undue compression upon the head. A third defect that it had, was the flatness of the internal surface of the blade, so that it did not conform to the convexity of the cranium, and the internal edge of the fenestra was very thick compared with the external margin. Hence, when much pressure was made by the forceps, the edges of the fenestræ left their mark, often bruising and sometimes actually cutting the fœtal scalp, giving rise to inflammation and even abscesses. I determined, therefore, to modify this otherwise excellent instrument, by accepting some of the peculiarities of Haighton's and Davis' forceps. The chief of these modifications consisted in rendering the internal surfaces of the blades concave, so that they would correspond exactly to

the surfaces of the head; also in enlarging the fenestræ that the parietal protuberances could project through these openings, and thus no encroachment would be made upon the diameters of either the pelvis or the head. They may be said to occupy no space. Again, I adopted the plan of Dr. Davis in having shanks intervening between the lock and the blades, and running parallel to each other, one anterior and the other posterior, and not laterally, as in Davis' instrument, by which arrangement there is no stretching the vagina, no danger of injuring the perineum, however high in the pelvis they may be introduced.

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One great improvement in these forceps is the form of the space between the blades: it is ovoid, the small extremity of which is towards the points of the blades, and the large extremity towards the shanks. Hence the greatest transverse diameter is about two-thirds the distance from the ends, and the whole space is in exact conformity to the ovoid shape of the fœtal cranium. When traction, therefore, is made, the force is applied, not upon one portion of the head, but upon the whole anterior surface, extending from the parietal protuberance to the face. This arrangement, if the instrument be made of well-tempered steel, is an effectual preventive of its slipping; the greater the force applied, the greater will be the compression of the head, and a retraction of the whole more within its grasp. If the head should be small the points of the blades may reach beyond the chin, and of course be firmly secured.

This modified forceps I presented to the class at the University during the session of 1837–38, but an account of it was not published until 1843, when my friend, Prof. Huston, of the Jefferson College, politely requested a drawing and a description of it for his edition of Churchill's Obstetrics (p. 335). I have used it very frequently in almost every variety of forceps cases where the head was in the superior or inferior strait, and even when there were great pelvic contractions to the extent of even three inches in the conjugate diameter of the brim. In all instances it proved most efficient and safe. I do not know that any injury has ever resulted from it either to the mother or child, not even an abrasion of the scalp. It has been much used, not only in this city, but, perhaps more extensively than any other, throughout the United States. I have heard of no criticism as to its safety and efficiency.

For the successful use of forceps as compressors, many circumstances must be taken into consideration. No unnecessary delay should be permitted. As soon as it is ascertained that the natural powers are inadequate, artificial means should be employed. It is unwise to wait until the patient's strength is exhausted and the fœtal life jeopardized by the severe and repeated uterine efforts. Sir Jas. Y. Simpson has abundantly demonstrated, by an array of facts, that the more prolonged the labor the greater, *ceteris paribus*, is the danger to the mother and child. In contracted pelves the difficulty can be ascertained at

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the beginning as well as at the end of labor, hence, the forceps should be applied as soon as the os uteri is dilated or at least easy of dilatation. There is no objection, and, to the experienced practitioner, no difficulty, in passing a suitable instrument even into the cavity of the uterus when the first stage of labor is completely over, and before the head is driven down or wedged in the contracted aperture. The blades being properly adjusted there is no necessity for immediate action. The forceps for a time may lie passively in the hands of the physician until the head is considerably depressed. Assistance should then be gradually rendered, when the compression, traction, and moderate leverage may be used with great efficiency in causing transit of the fœtal head. The natural *vis a tergo*, conjoined with the artificial *vis a fronte*, as Dr. Barnes expresses it, will thus insure as little delay as possible at that particular juncture when alone danger is to be apprehended; the rest of the delivery in ordinary cases is easy.

All action with the forceps should be intermittent, and in unison with the uterine efforts. Constant traction would keep up constant uterine action, which, interfering with the respiratory process of the placenta, would be dangerous.

Another important rule is that the blades should be as nearly coincident as possible with the *occipito-mental* diameter of the head, as compression will then be made in the most favorable direction. If the head should be arrested with the occiput towards the pubis, this rule can be readily fulfilled, but this is a rare circumstance. The head, far more frequently, is found directly transverse; these direct applications over the parietal protuberances will be, in contracted pelvis, so dangerous to the tissues of the mother, that it should not be attempted; in such cases, the forceps should be applied obliquely over the side of the occiput and the side of the os frontis, one blade being directed towards the sacro-iliac junction and its fellow towards the opposite ramus of the pubis. Compression in the lateral direction can thus be very satisfactorily made. The blades acting in this way over the opposite extremities of the head would have a tendency to facilitate rotation, which would be a desirable circumstance. Hence the importance of learning precisely the exact position, by means of the commissures and fontanelles, of the head in the strait. This is in contravention of the German

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practice, followed by many English practitioners, even by Dr. Barnes in his recent excellent work, of applying the blades of the forceps to the sides of the pelvis irrespective of the position of the head, a practice which I must regard as unscientific and often very detrimental. By following this rule the occiput and face would often be embraced, and all compression in this direction would tend to increase the transverse diameters of the head already locked between the pubis and sacrum, augmenting the difficulty of transmission and enhancing the dangers to the mother's tissues, especially the bladder and urethra. Such an application of the instrument can only be justified in rare and extreme cases.

Another rule for the successful application of the forceps, whenever they are employed, especially where the pelvis is contracted, is that flexion of the head must be previously induced[1] either by the natural bearing down efforts, or by the accoucheur. If the head be not flexed, the blades cannot be passed in the direction of the long diameter of the head, but will glide in the direction of the vertical diameter, for the top of the head, as represented by the anterior fontanelle, would be the lowest in the pelvis, and the base would be the highest. Traction thus made would be comparatively inefficient, and in the contracted pelvis perhaps wholly ineffectual, as the long diameter of the head would correspond to the lateral diameters of the pelvis; the occipito-frontal or mental instead of the vertical or cervico-bregmatic. This mode of operating is far too frequent, especially since M. Nægelè has so greatly ignored the deviated positions of the vertex, and introduced a practice at variance with the true mechanism of labor. Another serious objection to this direction of the blades, is that their points will necessarily project beyond the base of the cranium, endangering the tissues of the neck, or, if the cord should happen to be there, even the life of the child, by the pressure or laceration of the funis.

The almost universal direction given by our brethren across the water, of passing the blades over the ears of the child irrespective of the position of the fontanelles, has a tendency to

[1] Dr. Burns, who wrote his valuable work before the opinions of Naegelè had indoctrinated the profession, gave the same advice of pushing up the face and bringing down the occiput, by the vectis, before applying the forceps.

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confirm this serious error. I have no doubt that under the guidance of these and similar rules, the application of the forceps, in moderately contracted pelvis, will be far more successful than it has usually been represented, particularly by British obstetricians, and that the powers of this invaluable instrument will be still further developed.

SIXTH.—*Delivery in moderately contracted pelves can be effected with greater safety by the forceps than by podalic version.*

Of late years this question has been warmly debated by the profession, and is still *sub-judice.* Prior to the introduction of the forceps, version was the only resource in cases of difficulty. It was, however, generally abandoned, notwithstanding the high authority of Madame La Chapelle, preference being given to the long forceps. A revulsion in favor of version has taken place since the year 1845, owing to the great talents and the laborious efforts of Sir Jas. Y. Simpson, whose authority, supported by that of Dr. Radford, has induced many of the best accoucheurs, not excepting M. Cazeaux, of Paris, and Prof. Barnes, of London, to adopt his ideas and practice. The question is, of course, a very difficult one, and at present it is impossible to come to any positive determination, simply from clinical experience, so far as facts can be collected.

I do not now propose an examination of this point, having in my work on the Principles of Obstetrics, on p. 404 et seq., presented my objections both to the theory and practice of Dr. Simpson. I shall, therefore, now merely give the conclusions therein reached. The idea of Dr. Simpson that the top of the head of the child is flattened when driven down in a moderately contracted pelvis, and therefore that the transverse diameter is elongated, is hypothetical. No evidence is adduced, and it is difficult to conceive how it can be substantiated. Authors do not allude to it, and the ease with which the parietal bones overlap each other, as so constantly observed, is opposed to this assertion.

In speaking of the form of the head as being conical, it is a great error to say the base of the cone is at the top of the head, and the truncated apex at the lower part, and represented by the bi-mastoid diameter, measuring two and a half inches. That

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in some unusual cases the base of the cranium presents, especially when traction has been improperly directed, there can be no doubt, but this is *contra naturam.* It is very universally true when the process of labor is not interfered with, that either the chin or vertex presents. Hence, the proper representation of the form of the obstetric head is that of a double cone, the apex of one being at the occiput and the other at the chin, their common base being represented by the cervico-bregmatic circumference, and of course by the bi-parietal and cervico-bregmatic diameters. The head is, therefore, ovoid, and by a wise provision of nature the large extremity of the ovoid usually, 96 per cent., descends first. Any presentation of the top of the head as represented by the anterior fontanelle, or of the base of the cranium, is irregular and comparatively very rare. Moreover, it would be complicated by having the occipito-frontal, or long diameter of the cranium, substituted for the short or vertical, diameter. Dr. Simpson dwells upon the importance of having the bi-mastoid diameter present first in preference to the vertical, owing to the wedge-like form of the side of the head facilitating the descent, and that this portion is more compressible than the broad expanse at the summit; but as already remarked it is not the top of the head, but the occiput, that presents. It is with this portion, therefore, that the comparison should be made. The compressibility of the side of the head is very trifling, the mastoid portion of the temporal bone cannot be contracted, and this occupies one-half of the distance to the parietal protuberance, while a large proportion of the space between the occipital protuberances and the parietal protuberances is compressible, as is abundantly demonstrated in protracted labors, where the head becomes elongated and diminished in its lateral direction. The presentation of the vertex, therefore, is more favorable for delivery than the presentation of the base of the cranium. The length and compressibility of the occipital extremity being greater than that of the sides, no argument, therefore, for version by the feet can be drawn from the supposed advantage of the wedge form of the side of the head.

Numerous objections exist against podalic version. True, it is an easy and a safe operation when the uterus is distended with the liquor amnii, when it is in a relaxed state, and the

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child in a mobile condition, and when there is no special impediment to delivery, and where the chin is approximated to the breast. But even in such cases, statistics demonstrate that the average death of children is thirty-three per cent.; but in difficult cases, M. Capuron, who is endorsed by M. Cazeaux, affirms that the fatality amounts to seventy or seventy-five per cent. We have no statistics at present as to any advantages which can be positively claimed for the forceps in contracted pelvis. Neither can we expect any favorable report from those who employ the British forceps, for reasons already mentioned. The Continental physicians have generally trusted to this instrument rather than to version; and even the high authority of Dr. Simpson, supported by many of his English compeers, by Madame Lachapelle and M. Cazeaux in France, does not appear to have made many converts. Dr. Lusk, in a résumé of German practice, published in Elliot's "Obstetric Clinic," covering many thousand cases, states that after making every allowance for doubtful cases, the mortality of children in deformed pelvis was thirty per cent. in vertex cases, and thirty-six per cent. in version cases. Dr. Lusk concludes from his extensive review, that the experience in Germany is decidedly in opposition to Simpson's views. Even M. Cazeaux, who gives a preference to version, has known children to be delivered naturally when the short diameter of the pelvis has measured three inches, or even less, and advises, that if turning should be impracticable, an attempt should be made with the forceps before perforation, as with their assistance children have often been born alive. Dr. McClintock, of Dublin, and Dr. Martin, of Berlin, are both in favor of occipital rather than pelvic deliveries in contracted pelvis. In the former case, time can be allowed for the gradual moulding of the head, while in the latter, the delivery must be speedily effected with strong traction.

Theoretically, the strongest argument in favor of version is the assertion by Drs. Simpson and Barnes, that it is not the bi-parietal diameter which is immediately involved, but that the head is nipped in the bi-frontal diameter, between the pubis and sacrum. They support this opinion with the fact that an indent or depression is often found on the side of the os frontis where it had been pressed by the promontory of the sacrum,

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and not at the projection of the parietal bone. Hence, it is the bi-frontal, measuring three inches, which is involved, and that, as a necessary consequence, the whole head posterior to the bi-frontal commissures, descends upon the right or left side of the pelvis, thus rendering, they say, deliveries by the base more easy than deliveries by the vertex. The truth of this assertion is not by any means clear, for if the side of the os frontis presses against the sacrum posteriorly, it would imply that the head was in an oblique position, and hence it would not be the os frontis that would be opposed to the symphysis pubis, but the parietal bone behind the ear, which would give, not the bi-frontal, but the fronto-parietal diameter as corresponding to the conjugate diameter of the strait, which would measure fully as much as the bi-parietal diameter. Moreover, it presupposes that the transverse or oblique diameters of the strait are not contracted, which they usually are in a deformed pelvis. Even if it were true that the head could thus be brought through, presenting its bi-frontal diameter, this constitutes no argument in favor of pelvic deliveries, inasmuch as there must be the same accommodation on one side of the pelvis for a larger part of the head where the vertex presents, and hence the bi-frontal diameter would be concerned in the one case as much as it is in the other. The simple truth is, that there is a body of a peculiar size and shape which is to pass through the kidney-shaped opening, and this body being an ovoid, it is, mechanically speaking, of no importance whether the smaller or greater extremity of the ovoid projects first through the opening.

I cannot, therefore, avoid the conclusion, in view of all the facts and opinions, that, in cases of contracted pelvis where there are at least three inches in the conjugate diameter, the delivery by suitable forceps is far more safe for the mother, and that the mortality for the child would be less. All practitioners acknowledge the great difficulties and dangers incident to podalic version when the passages are contracted, enhanced immeasurably when the liquor amnii has been evacuated and the uterus firmly contracted on the child. Often in these cases it is not merely dangerous, but actually impracticable. Details are unnecessary. If the forceps be employed, comparatively no additional danger to the mother is incurred; the child de-

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scends with that presentation which is always regarded as the most favorable. The blades of the forceps occupy no space. All the compression that is requisite, is made by the forceps rather than by the walls of the pelvis, and the greater the compression of the head, the less pressure there is upon the pelvic tissues. The extracting powers of the instrument can be regulated with the greatest facility, and be employed or intermitted at pleasure; time being given for the gradual moulding of the head, as well as for the extractive efforts, inasmuch as the circulation of the funis and placenta are comparatively little disturbed. In my own experience the tissues of the mother have not been injured, or her life endangered. The advantage then for the mother greatly preponderates.

In version, even in natural labors, the child frequently perishes, often in the proportion of one to three, but in deformed pelves the deaths are more than double. The reasons have been already stated. The placental functions are necessarily interrupted, so that the whole process of delivery must be accomplished in four or five minutes. No time is allowed for the gradual compression and moulding of the cranium. Powerful traction must be made by the muscles superadded, according to some, by the weight of the accoucheur, all of which power is directed through the medium of the child's neck, injuriously to its tissues, and not unfrequently there is a complete laceration of it, so that the practitioner sometimes finds himself prostrated, holding the decapitated trunk in his hands. Certainly this is not in accordance with science based on natural laws. The danger to the child from the above causes is aggravated by the neglect of the leading advocates of this practice to secure flexion of the head in unison with nature's mode of delivery, securing the synclitism of the cervico-bregmatic circumference of the head, instead of the occipito-frontal, as must be the case when the bi-mastoid descends first.

I may add that version or the forceps, in cases of contracted pelvis, should be regarded, in the present condition of our knowledge, as an elective operation. The practitioner, recognizing the deformity, should determine as soon as possible which mode of delivery to adopt. His decision should then be irrevocable. This must be the case if version be employed, the forceps must be abandoned; it ought also to be the case when the forceps

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operation is determined on. The blades being once applied should not be removed till delivery be accomplished, for, if the instrument be well constructed, the child can be delivered, if there be three inches in the conjugate diameter, sometimes, though not always, with safety. Nevertheless, we continually read in the journals of the forceps being applied once or twice and then abandoned with the declaration that after much effort the head would not descend. This certainly indicates the bad character of the instrument. What is still more surprising is, that after such failure version must be resorted to, and even with safety to the child. It has been said that success justifies the means, but how a practitioner can be justified, in a protracted case of delivery, where the waters have been long evacuated and the body of the uterus firmly contracted upon the body of the child and placenta, and when a portion, if not the whole, of the presenting part has passed the circle of the os uteri, in attempting version, is inexplicable. *A priori* it would seem to be impossible. The uterus is firmly contracted to a comparatively small size, there is no room for the return of the presenting part, and every attempt to push up the head and to introduce the hand, must be of the most imminent danger to the integrity of the vagina and uterus, and we know that the operation is often impracticable and fatal. No latent hope that the child might possibly be saved under these circumstances can compensate for the immense risk to the mother.

If the considerations now presented be hereafter confirmed, the utility of this invaluable obstetric instrument, the forceps, will be greatly enhanced. Its value, however, is not to be restricted even to the cases mentioned, for it may be affirmed—

SEVENTH, *The obstetric forceps, when well constructed, is the best extractor in cases of dead children, and also in cases of craniotomy.*

Of course, if the child be dead, there can be no objection, even when there is no disproportion between the head and the pelvis, to make powerful compression not only by the hands, but by a fillet wound tightly around the extremities of the handles. Some little time may be allowed for the yielding of the bones of the head before traction be made, then delivery can be effected with comparative ease, as all the diminution

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made in the cranium not only facilitates its descent, but diminishes the pressure on the sensitive tissues of the pelvis.

If, however, there be any mechanical impediment, the head should be perforated, either before or after applying the forceps, and the brain and meninges should be well torn up, and then compression be made in the manner just mentioned. By the Hodge forceps the transverse diameter can be thus diminished to two inches, and for reasons already mentioned, the head will glide more and more into its grasp as the parietal bones yield, so that slipping will be an impossibility, and all requisite power is at command for delivery. So far from injuring the mother's tissues, they are comparatively safe in proportion to the diminution of the size of the head. Compare this with all the extractive instruments hitherto employed in craniotomy, as the crotchet, single or double, the craniotomy forceps of every variety, the cranioclast, tire-tête, etc. The direct influence of all these instruments is that of mere tractors. The head, it is true, is indirectly diminished, but as Dr. Meigs well expresses it, it is upon the principle of wire-drawing; the body is drawn from a larger to a smaller opening by mere force. The diminution of the size is effected by the resistance of the walls of the aperture. In labor, therefore, in a deformed pelvis, the opening is formed of bone covered by vital tissues; all the compressing force, thus, which is often immense, must be at the risk of the integrity of these tissues. The horrible results not unfrequently met with in the form of contusions and lacerations of the neck of the uterus, of the vagina, bladder, rectum, etc., are too well known to need repeating. Another terrible source of mischief is the slipping or tearing away of the hooks and crotchets, by which even the hand of the practitioner, as well as the parts above mentioned, are lacerated; or by the dragging away of portions of the cranium with their sharp serrated edges, with consequences almost equally severe, when extraction is to be repeated over and over again. No wonder craniotomy is reported by a late writer as the most terrible of obstetric operations, or that M. Baudelocque, Jr., should declare that fifty per cent. of women in these bad cases perish! How tedious and painful also is the convalescence of those that escape! How often are they left with fistulæ of the vagina, bladder and rectum! How fre-

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quently do they suffer from dangerous thrombi, pelvic abscesses, vaginitis, metritis, adhesions and contractions of the vagina and neck of the uterus, and complete atresia!

I feel confident that nearly all these sufferings can be avoided by abandoning this wretched "wire-drawing" process and adopting an entirely new principle; that diminution of the head may be accomplished, not through the intervention of the mother's tissues, but by forceps, strong as they need be to insure sufficient compression for an easy delivery. This principle I have adopted and inculcated for more than thirty years, and have no reason to doubt its comparative safety, having observed no ill consequences even in very protracted deliveries, or when the transverse diameter was reduced to three inches. My first experience was in the case of a young primipara who had been five days in labor, under the care of a midwife, and afterwards of several physicians, who, *inter alia*, had given large doses of ergot. The patient was still in good condition, but the uterine efforts had subsided. Tumefaction of the head was so great that the presentation could not be determined with accuracy. I applied a strong pair of Baudelocque's forceps, but soon found the head was immovable. Perforation was therefore necessary, but as the head was firmly held, I determined that the forceps ought not to be removed. I gradually approximated the handles with a strong fillet, and was gratified to find that the head soon became movable and was delivered without any real difficulty. It was found that the arrest was owing to a presentation of the side of the head at the superior strait, and that the blades had been passed over the occiput and os frontis, and thus the long diameter of the cranium was lessened sufficiently for the transit of the head through the pelvis, and also through the inferior strait and vulva, and this without laceration of any of the tissues, not even the perineum. The patient readily recovered.

My next experience was equally remarkable. My excellent friend, Dr. Warrington, called me in consultation where there was an arrest of the head at the brim, the conjugate diameter being about three inches. Dr. W. had used the forceps, and repeated the operation after my arrival, but the head not descending he requested me to operate. I had no hesitation to make strong compression as well as traction, and for some time there

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was no apparent effect, but during my efforts we were startled by a loud noise evidently within the abdomen. After which all difficulty vanished and delivery was accomplished. An examination showed that the noise was caused by a sudden collapse of the left parietal bone, which became, as it were, inverted, concave externally. The patient recovered without any bad symptoms.

Such facts—and many might be adduced—prove that the forceps may be so constructed as to be capable of making compression, and on suitable occasions they should be used as compressors, and as a substitute for the various tire-têtes heretofore employed.

EIGHTH.—*On the principles above inculcated, the introduction of cephalotripsy into obstetric practice by M. Baudelocque, Jr., should be regarded as the greatest improvement in operative midwifery since the seventeenth century.*

The cephalotribe, or brise-tête, indicating a crushing instrument, I have always thought an unfortunate name. True, the head is broken or crushed, but this is only one effect. It fulfils all the duties of a pair of forceps. Baudelocque's instrument is, indeed, nothing more than an enormous pair of strong forceps furnished with a screw by which the handles can be approximated, and thus the head in the grasp of the blades would be lessened and delivered through a contracted passage. Like the forceps, therefore, they act as *compressors*, *tractors* and *levers*. This idea should be borne in mind, as in many modifications since made, it seems to have been forgotten, some regarding it simply as a brise-tête, and others more as a double crotchet.

We have already indicated the great value of the principles involved; first, that the head is to be diminished, not upon the principle of wire-drawing, by the tissues of the mother, often to their irreparable injury, but by means of the blades. All the compression thus made lessens the pressure upon the mother's organs, perhaps in a direct ratio. This result is generally so effectual that, unless the deformity be very great, no injury is sustained by the parent. This, at any rate, is my experience. The mother's tissues were unhurt, and her convalescence unretarded. This affords a great contrast with all the reported

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crochet deliveries, as they are usually termed, so tedious, so painful, so dangerous, not only to the pelvic organs, but also to the life of the mother. Well might Chailly exclaim, "Grâce au Ciel! that all the hooks and pincers have been driven from practice by the introduction of the cephalotribe." Thus he wrote in France thirty years ago; and I cannot but regret that the advance of improvement has been so slow that hooks and craniotomy forceps are still the common resort of the profession in all parts of the civilized world.

The original cephalotribe of M. Baudelocque, Neveu, was first described by him in a paper before the French Institute, in 1829. A more elaborate account was published in 1832; and in 1833, a gold medal, valued at two thousand francs, was accorded him as a testimonial of the high estimation of the value of his instrument.

This cephalotribe was very heavy as well as long. It resembled, in its general conformation, the French forceps, the blades being without fenestræ and very concave on their internal surface, while at the extremities of the handles a strong screw was fixed, attached to a crank mandible, by which the handles could be forcibly approximated and the head crushed. Its weight was seven pounds. Soon after, in 1841, Busch reduced the weight to four pounds, and it became generally employed in France. A short history of the cephalotribe is given by Dr. Lusk, of New York, in a paper before the Academy of Medicine, and published in the *Medical and Surgical Reporter* for June 8, 1857, from which it would appear that, in Germany, the cephalotribe was first modified by Prof. Braun, of Vienna, afterwards by Scanzoni, of Wurzburg, by Busch, of Berlin, and Seifert, of Prague. Dr. Paul Grenser, of Dresden, states that there are four varieties in general use in Germany. The character of these German instruments differs from the French, in being much shorter and lighter, with the ends of the blades turned inwards, and their internal surfaces furnished with ridges, so that they act much upon the principle of the double crotchet.

Many years elapsed before the accoucheurs of Britain adopted the cephalotribe. They did not approve even of the long French forceps, and dreaded the stronger compressors of Baudelocque, Jr.

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"The theoretical objections to the brise-tête of Baudelocque[1] seem to be very great, *à priori.* First, its weight, amounting, according to the specimen in the author's possession, to nearly five pounds; second, its unnecessary length; third, the great power of the screw, and the large size of the handle or crank—all of which circumstances demand great care and attention in its employment, and sometimes may render its use difficult. The main theoretical objection, however, is the effect which such a powerful compression must have upon the bones of the head, and the dangers which may result to the mother. It might readily be supposed that the bones of the head being fractured, their sharp edges would be driven through the scalp of the child into the tissues of the mother; all attempts to extract, under such circumstances, would be exceedingly dangerous, if not impracticable.

"Experiment and observation have, however, not confirmed these theoretical objections. The author made a number of experiments upon the heads of children that died at term, and found that when the brise-tête was applied upon the sides of the head, the transverse diameter would be readily diminished to two inches, while the occipito-mental diameter, and also the cervico-bregmatic, were lengthened. The bones were turned inward upon the cavity of the cranium, and although fractured, in no case did they penetrate the scalp. . . . . The top of the head projected during the process of compression to a considerable degree beyond the edges of the blades, but this of course would afford no impediment to delivery. Being satisfied of these important points, the author, not willing to employ the heavy instrument of Baudelocque, induced Mr. Rohrer, who had assisted him so materially in the construction of his forceps, to make, in 1843, some modifications in the French instrument. These modifications chiefly embrace the size and weight of the instrument, the change in the cephalic curve, and some alteration in the mechanical arrangement of the screw in the handle. . . . . The instrument thus modified is far more manageable than the cephalotribe, and even than the common forceps, as the blades are narrower. The name 'compressor cranii' has been adopted as indicative

[1] Principles and Practice of Obstetrics, by Hugh H. Hodge, M.D. Philadelphia, Blanchard and Lea, 1864, p. 273, et seq.

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of its mode of operation. The whole weight of the instrument is three and three-quarter pounds. The proper *blades*, or cephalic portions, are without fenestræ, as in the brise-tête, and are six inches and five lines long, and one inch and five lines broad; the extremities are rounded, and the exterior convex, and well polished. The pelvic curve is lessened, and a perpendicular line, drawn from the upper edges of the points of the blades to a horizontal surface, upon which the instrument is placed, measures three inches; the cephalic curve is similar to that of the author's forceps, so that when the handles are closed, the points are in contact, and the greatest breadth, measured from their outer convex surfaces, is one inch and nine lines, and is nearer to the shanks than to the points, the former distance being two inches and three lines, and the latter four inches and three lines. Hence, the blades, when closed, can be passed through an orifice measuring two inches by one inch and five lines, and include an oval space. The inner surface of the blade is smooth, but quite concave from one edge to the other, contributing, by the projection of the margin of the blades, to prevent any slipping of the instrument. The danger of slipping, however, is chiefly counteracted by the peculiar form of the cephalic curve, as above described, causing the whole head, where compression is made, to glide more and more within the grasp of the forceps, till even the points project, in some instances, beyond the chin.

"The *shanks* are thick and strong, and diverging from the joint, terminate at the distance of three inches and five lines, in the cephalic portions. The lock is formed of a pivot, half an inch in length, strongly riveted into the left branch, and surmounted with a very broad flat button, an inch and a quarter in diameter. The right branch is furnished with a mortise for the reception of the pivot, as in the English forceps. The flat surfaces of each blade, at the joint, measure about two and a half inches, by one inch in width. These surfaces, in conjunction with the broad button of the pivot, prevent any disposition of the blades to twist when compression is made, and thus maintain the parallelism of the blades.

"The handles are nine inches and six lines in length, each one being flat and slightly tapering from the joint toward its extremity, where they measure seven to eight lines in width,

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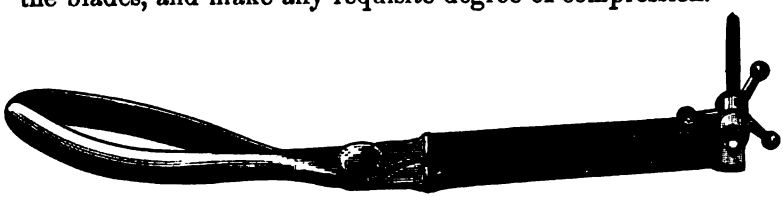
but toward the joint, about eight or nine lines, and three lines in their thickness: These flat surfaces are roughened.

"At the lower extremity of the left handle is attached a screw, four and a half inches long, fixed by a pivot, and is made to pass through a large opening or foramen at the extremity of the right handle. It may be convenient to have a slit in this foramen, so that the screw may be turned in or out at pleasure. A movable nut with female screw, and furnished with three projecting handles, an inch and three quarters in length, is adapted to the male screw, so that when the screw has been passed through the opening of the right branch the nut will act as a powerful screw and lever to close the blades, and make any requisite degree of compression.



"The *Compressor Cranii* being made of strong steel, well tempered, is unyielding, and capable, under the influence of the screw, to compress any fœtal head at term, so that its transverse diameter should measure but two inches. It is as effectual, therefore, as the heavy brise-tête of Baudelocque, while being lighter and of smaller size, it can be handled with much more ease and precision. It can, indeed, owing to the narrowness of the blade, be applied with more facility than even the forceps. In operating with the compressor cranii, in a case, for example, of deformed pelvis, the blades are to be introduced separately wherever there is most room, and as near as practicable to the sides of the child's head, but, of course, never directly toward the pelvis or sacrum. The male blade must be introduced first, and then the female blade on the opposite side; this can generally be done with facility. The practitioner should take care, if possible, to insert them so deeply that the points of the instrument should reach the face of the infant, in order that the whole head should be subjected to pressure, otherwise, after compressing the cranium, it may possibly be requisite, if the deformity be great, to loosen the instrument and reapply it so as to embrace the facial extremity

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of the head. Being carefully applied, pressure on the handles will be sufficient to determine whether the instrument is properly located, and whether the tissues of the mother are not within its grasp. The screw, then, may be employed, and very slowly tightened as the vault of the cranium yields, and as the top of the head becomes more and more projected below the blades into the pelvis. When the compression is completed it will be advisable, especially in those cases where the blades have been applied to the sides of the pelvis before making any traction effort, gradually to twist the forceps, so as to approximate the blades to the sacrum and the pubis. The effect of this manœuvre will be to bring that diameter of the head which has been diminished to two inches in the direction of the shortest diameter of the superior strait; for it is manifest, that if the blades of the compressor be applied to the sides of the pelvis they will have a tendency rather to increase the size of that portion of the head intervening between the pubis and the sacrum, while by turning the instrument, and with it the head, the smallest diameter of the cranium will correspond to that of the superior strait. This being accomplished, the instrument may now be used as a tractor and lever, slowly and carefully, in causing the descent of the head, precisely as delivery is effected by the forceps.

"Great care should be taken as the head passes over the perineum that this tissue is not injured by undue pressure from the head, or from the extremities of the blades, which may, when the compression is great, be found projecting beyond the chin.

"When the deformity is great, especially at the lower part of the pelvis, after the compression of the head has been completed, and after it has descended to the floor of the pelvis, it may be advantageous, by means of the craniotomy scissors, to remove the upper portion of the head which projects below the margin of the blades, taking the convex edge as a guide for the course of the scissors; thus, much less space will be occupied by the head, and less pressure made upon the vagina, the rectum and perineum. This may be the more necessary, as the cervico-bregmatic diameter, which corresponds to the coccy-pubal, is augmented during the compression.

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"But whatever modifications the instrument may require, the great fundamental principle now urged upon the profession, that the diminution of the size of the child's head should be accomplished by instruments acting as compressors, and not by the bones and soft tissues of the pelvis—as must be the case where tractors of any kind are employed—is not to be forgotten in any case where cephalotomy has to be performed. This principle being acknowledged, the operation of craniotomy will be divested of half its terrors; perforation and compression, each of which can be very easily and safely performed, embrace all the important peculiarities of the operation, traction being securely effected, as in the common operation of the forceps. The patient thus escapes all those varied dangers arising from slipping of the crotchet, the breaking up of the bones of the cranium, and the removal of sharp broken fragments of the bones by means of hooks, osteotomist, cranioclast, etc.; and especially the terrible contusion and laceration of the tissues and viscera of the pelvis, which must result, to a greater or less degree, by dragging the child's head through the contracted passages. . . . . .

"If there be three inches in the antero-posterior diameter of the superior strait, craniotomy should not be resorted to, if the child be living, until at least every other measure, especially by means of the forceps, has entirely failed. And it is in such cases, where the deformity varies from that of a standard pelvis to that where the short diameter is three inches, that the forceps, in modern times, has been so effectual in preserving the lives of many infants, which would otherwise have perished from neglect on the one hand, or from craniotomy on the other.

"If, however, the deformity be below three inches in the conjugate diameter, and the patient arrived at the full period of gestation, craniotomy becomes justifiable for the sake of the mother; for a living child at term cannot pass through a pelvis so contracted. . . . . .

"If, however, the contraction of the short diameter of the pelvis be two inches, or under, then, ... the Cæsarean operation is to be preferred, as affording a better prospect for the mother, while it has the strong recommendation of affording a good prospect of safety for the child."

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THE USE OF THE HAND TO CORRECT UNFAVORABLE PRESENTATIONS AND POSITIONS OF THE HEAD DURING LABOR.

By JOHN S. PARRY, M.D., Attending Accoucheur to the Philadelphia Hospital, Vice-President of the Obstetrical Society of Philadelphia, etc., etc.

(Read before the Obstetrical Society of Philadelphia, Nov. 6th, 1873.)

It is only after much thought and a series of observations, which have extended over a number of years, that it has been deemed proper to direct attention to the method of changing unfavorable presentations and positions of the child's head which is about to be described. The recommendation will be sharply criticised by some and emphatically condemned by others, but it is made, after no inconsiderable observation, with the earnest hope of diminishing the suffering of woman in the discharge of her highest function, as well as to preserve the lives of her children. The responsiblity of making the suggestion is fully realized, and at the very outset it is desirable to distinctly reassert the truth of the trite maxim, that "Meddlesome Midwifery is bad." The faithful student soon perceives how wonderful Nature is in her resources, how marvellously she adapts means to ends in emergencies, and he becomes convinced that, though labor is likely to be more painful, more tedious, and consequently more dangerous in the class of cases alluded to, the child will usually be born without assistance. As will be stated more fully in the sequel, it is not intended to recommend indiscriminate interference in unfavorable cephalic presentations and positions, but to suggest a method of rapidly terminating labor in certain cases in which Nature *is unable* to complete her work.

The hand may be employed to facilitate delivery in a series of widely different conditions, but the following are those to which attention will be directed in this paper:

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1. To flex the head when partially extended in all its presentations.

2. To transform occipito-posterior into occipito-anterior positions.

3. To change presentations of the face with the chin behind, into those of the vertex with the occiput in front.

Of the first class of cases nothing will be said at present. In regard to those of the third no excuse need be offered for any reasonable attempt to mitigate their severity or to remove their dangers, which all accoucheurs recognize and deeply deplore. In relation to the posterior positions of the occiput it is not improper to make a few preliminary remarks.

It cannot be denied, as was shown by Naegelè, that in the large majority of these cases the head will rotate, and labor be terminated by the spontaneous change into right or left occipito-anterior positions of the vertex. It cannot, however, be admitted with the same high authority that in these cases labor terminates as quickly, with as little suffering, and as favorably both for mother and child, as if the occiput was originally directed to the anterior portion of the pelvis. The experience of most accoucheurs will confirm the opinion of Hodge, America's most eminent obstetrical authority, that, in consequence of the distance which the head has to traverse, labor is more painful, tedious and dangerous.

In consequence of these facts, most authorities in obstetrics insist upon the necessity of carefully watching the progress of the labor in occipito-posterior positions, and of facilitating rotation if it does not occur spontaneously. This is to be effected by pressure made either by the fingers applied to the temple of the child, or the vectis over the occiput, while Simpson and his followers direct the accoucheur to turn the head of the child with the forceps when it has descended to the floor of the pelvis. The latter proposition need not be discussed here. The former methods are entirely practicable in most instances, and at the bedside it will rarely be found that any other manipulations than those with the finger or vectis are necessary; but it is unfortunately the occasional lot of the obstetric physician to fail in his attempts to produce anterior rotation by any of the means which are usually advocated by authorities upon this subject. Under these circumstances the forceps might be applied and an

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attempt made to drag the child into the world in its unfavorable position, or, failing in this, version might be resorted to, an operation which in cases of delay is very difficult to perform, and is dangerous alike to mother and child. Besides these, the only other resort is craniotomy, the most terrible of all operations in obstetric surgery. It is to add another to the obstetric physician's resources, and to enable him to avoid this terrible alternative that this paper has been prepared.

In the ordinary manipulation to rotate the occiput in front in posterior positions, the operator is told to change the position slowly in order to avoid injury to the child by twisting its neck too suddenly. That accidents have arisen from this cause, and the child's life been sacrificed in consequence, is probably true, but it seems not unlikely that the shoulders rotate in the cavity of the uterus more frequently than is usually supposed, and that the child will bear, without injury, more manipulation than is generally believed. As this point is not fairly established, and as change of the occiput from an unfavorable to a favorable position may involve rotation of the head over a considerable portion of one side of the pelvis, it is to be distinctly understood that the manipulation, which will be described presently, is only to be resorted to in those rare cases in which nature is not equal to her work, and after the more common means have been fairly tried and have failed, when the only other alternatives are version under great difficulties, or if this proves unavailing, craniotomy.

The procedure is applicable to cases in which the head is arrested either at the brim or in the upper portion of the cavity of the pelvis. Before it is resorted to the accoucheur must be absolutely certain of his diagnosis. About this there must be no error, or otherwise he will convert a favorable into an unfavorable case. I have never allowed myself to employ the hand in the manner and for the purposes about to be described, until the diagnosis had been confirmed by a thorough examination with the whole hand introduced into the vagina. As this occasions pain, it is almost always necessary to make the examination with the patient under the influence of ether.

The operation may be performed with the patient upon her back or in the ordinary obstetric position on the left side. The former is far preferable in most instances, as it allows more

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freedom of manipulation, and the back of the hand applies itself more perfectly to the hollow of the sacrum. The patient should be brought close to the foot of the bed, with her buttocks at the edge of the side, and her feet supported on two chairs or by assistants. The physician now takes his position at the foot of the bed and at the right side of the woman. Previous to proceeding with the manipulation the patient should be thoroughly etherized, since the best directed efforts may fail if she is not perfectly relaxed. This done, and the bowels and bladder having been emptied, the accoucheur is to pass his right hand, well oiled, into the cavity of the pelvis, the dorsal surface of the fingers being passed along the hollow of the sacrum over the posterior portion of the presenting part, and the thumb behind the pubis over its anterior portion. In the meantime the left hand has been applied to the fundus of the uterus to steady that organ. This accomplished, the next movement is to carry the head of the child, which lies in the palm of the hand in the vagina, well up above the brim of the pelvis. The following steps of the operation vary with the presentation and position. If it is simply a partially extended vertex, or a brow-presentation with the occiput in front, the head is simply flexed, after which the case may be left to nature, or the forceps applied, as may seem best.

If the case be one of a face-presentation, with the chin behind, the head is to be completely flexed, and the presentation and position changed to the most favorable of all others, an occipito-anterior of the vertex.

In occipito-posterior positions of the vertex more is needed than simple flexion. The head of the child is grasped in the hand with the fingers over the occiput and the thumb over the forehead or temple. Having lifted it above the brim and secured flexion, the left hand is to be removed from the fundus of the uterus where it has been employed in simply supporting the organ. It is now to be used to force rotation of the body of the child by external manipulation, the anterior shoulder being the point against which these efforts may be directed with the most effect. While the shoulder is being pushed to the opposite side of the cavity of the uterus, the hand in the vagina acts upon the child's head and rotates the occiput from a posterior into an anterior position, of course imitating nature in the

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manœuvre, and changing a right posterior into the right anterior position, and a left posterior into the left anterior occipital position.

If the uterus will now contract strongly, the hand may be retained for a little time until the head is fixed in its new position, when the case may be left to nature. If pains have ceased the forceps are to be applied above the superior strait, before the hand is removed from the vagina. Inasmuch as this may be necessary this instrument should always be at hand before commencing the manipulation. For the same reason the patient is to be placed in a position in which the application of the forceps may be made at any time, and because the blades of the instrument have to be carried high up, it is necessary that the buttocks be placed close to the edge of the bed, so that the handles can be pushed well back on the perineum. For precisely the same reason the right hand only should be used to act upon the child's head, since the right or male blade of the forceps has to be introduced with the left hand.

The application of the forceps is not more difficult under these circumstances than in the ordinary high operation, except that the blades have to be passed up rather higher than when the head is driven down upon the brim by the uterine contractions. Some care has also to be taken to prevent the head leaving the new position during the introduction of the first blade, but more especially immediately after the removal of the right hand and during the preparations for the introduction of the second blade. The first blade having been put in position, the hand should not be removed too soon, not until the head has been carried to the opposite side of the pelvis, when the blade of the forceps fairly applied to the side of the child's head is to be used as a lever in the absence of the hand to fix the presenting part against the pelvic wall of the opposite side, in order to prevent the possibility of its returning to its original position. At this point in the operation an intelligent assistant, or at least one who can be trusted to execute all directions faithfully, is necessary to steady the blade while its fellow is being introduced. The left blade of the instrument is to be introduced as in ordinary cases, the accoucheur having always assured himself that the head has not changed its position previous to its introduction.

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To illustrate the opinions which have been enunciated the following histories of cases are related. Others might be published, but these are sufficient to illustrate all the principles to which attention has been directed. The first, though a very difficult labor, is one of the simplest of the class of occipito-posterior positions. In this instance the combined manipulation was successfully resorted to without a previous trial of the vectis, which was not at hand. In the second, though anterior rotation was accomplished with the forceps after considerable difficulty, the woman could not be delivered until flexion and rotation had been secured by elevation of the head above the brim. In the third the manœuvre was successfully employed in a case in which the face presented with the chin behind, and in which my conviction is, that it saved the life of the child. In the fourth it was an important aid to delivery in a difficult case of craniotomy.

CASE I.—*Right occipito-posterior position. Rotation of the occiput with the hand. Delivery with the forceps applied above the brim.*

Mrs. Dr. W., æt. twenty-six, primipara, was seen in consultation with Dr. Harrison Allen, at 11 o'clock A.M., on June 14, 1872. She had at that time been in labor for nearly twenty-four hours and the first stage had terminated two hours and a half before I reached her. During that time there had been no advance of the head, though she had strong pains. Although a vigorous woman, she was much exhausted, with a furred tongue, rapid pulse, hot skin, and hot, dry vagina.

There was a large caput succedaneum which, with the violent bearing down efforts produced by the examination, prevented the recognition of any suture or fontanelle, but the position was supposed to be the left occipito-anterior. The head was arrested and seemed to be fixed at the superior strait.

Wallace's forceps were applied at the superior strait, and though strong traction was made, the head could not be made to descend in the least, while the patient complained of severe pain in the abdomen and back in the region of the promontory of the sacrum. She said that it felt as if something was fast inside of her and was being dragged away. It was painfully evident that the obstruction could not be overcome by any justifiable traction, as the forceps were applied; and it appeared

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probable that there had been an error in the diagnosis of the position. Re-examination did not enable us to correct this, owing to the presence of the large caput and the violent expulsive efforts produced by the manipulation.

She was now thoroughly etherized, and a right occipito-posterior position diagnosticated, after which I passed the right hand into the vagina, and placing the fingers over the occiput and the thumb over the brow, with considerable effort raised the head above the brim of the pelvis and made forcible flexion. Then placing the heel of the hand upon the exterior of the abdomen, below and to the right of the anterior shoulder of the child, I attempted to rotate the body in the uterus, while at the same time I easily rotated the head to the right occipito-anterior position. The male blade of the forceps was introduced without removing the hand, after which Dr. Allen supported the handle, and using it as a lever made mild pressure upon the side of the head. An examination proved that the position was unchanged, and the second blade was applied. The instrument (Wallace's) locked easily; the lock being in contact with the vulvar orifice. Strong traction was required before the head passed the pelvic brim. It descended rapidly through the cavity, but was delayed upon the perineum, owing to the extreme distention of this structure which was necessary before the head could be born. This occurred a little more than an hour after the application of the instrument. The body was born in a few minutes, restitution occurring as in cases of primary right occipito-anterior positions of the vertex.

The child, which was above average size, breathed feebly at first, but soon cried lustily. There was temporary paralysis of the portio-dura of one side from pressure of the forceps. The mother's recovery was uninterrupted and perfect.

CASE II.—*Left occipito-posterior position of the vertex. Rotation with straight forceps. Attempt to deliver with Hodge's forceps by rotating the occiput into the hollow of the sacrum. Anterior rotation of the head by manipulation. Delivery of a living child by Wallace's forceps. Recovery of the mother.*

E. B., æt. 20, single; born in Ireland, fell into labor at full term, in the Philadelphia Hospital, about noon, April 25, 1871,

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under the care of Dr. A. W. McCoy, resident accoucheur. The duration of the first stage was eighteen hours and a half. The membranes ruptured at 6 A.M. on the 26th, and during the succeeding hour the vertex descended into the upper part of the cavity of the pelvis. At this point the progress was arrested, though the pains continued strong. I reached her at 10 A.M. She had a cool skin, clean tongue and strong pains. The vagina was cool. The head, a large one, was in the left occipito-posterior position, and the occiput was disposed to rotate into the hollow of the sacrum. There was a middle-sized caput succedaneum and the head, which was partly extended, had commenced its descent into the cavity of the pelvis. The anterior portion of the head was tightly wedged against the anterior parts of the pelvis, though there was more room behind. The labor had not advanced any for three hours, and the patient, though not exhausted, was beginning to show the effects of violent exertion, and begged that the labor be terminated with instruments. The forceps were therefore resorted to.

Straight forceps (Beatty's) were applied without great difficulty, and the head was rotated from the left occipito posterior into the anterior position of the same side. This was effected with some difficulty, and only after the exertion of more force than we thought good for the child. As soon as the force was removed, the head with the forceps would immediately return to the original occipito-posterior position. Strong traction was now made and continued for some time, but without producing any progress in the labor. The straight forceps were removed with great difficulty, an ear of the child being caught in the fenestrum of one of the blades.

An attempt was now made to secure perfect flexion, but was unavailing. Wallace's forceps were then easily applied with the head nearly in the first position of the vertex. Very powerful traction was continued for an hour, but without advancing the labor. The instrument was then removed, when the head returned spontaneously to its original position. Hodge's forceps were then tried, with the head in the left occipito-posterior position, and the delivery attempted by rotating the occiput into the hollow of the sacrum, but though violent efforts were made the head did not move in the slightest.

These manipulations occupied more than three hours, and

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the waters had been evacuated for more than seven hours, yet the fœtal heart was still beating loudly. In consequence of the partial descent of the head in the cavity of the pelvis, and the rigid contraction of the uterus, version had been considered, but declined. No alternative seemed to be left but craniotomy, when she was brought thoroughly under the influence of ether, and the whole hand passed into the pelvis, with the fingers over the occiput and the thumb over the temple. With a strong effort I succeeded in carrying the head above the pelvic brim, after which flexion was easily perfected, and by combined manipulation the occiput was brought round into the first position of the vertex, and the body was turned in the cavity of the uterus. It is possible that version could have been performed at this time, but after a little thought I determined to repeat the attempt to deliver with the forceps. Wallace's instrument was easily introduced, and after strong traction the head was dragged through the superior strait and pelvis, and was born at two P.M. Much force was necessary to effect delivery of the shoulders and pelvis of the child. The child, which weighed nine pounds, cried feebly when born, but was soon resuscitated. There were superficial abrasions beneath each ear. The caput succedaneum was very large, and the head was much distorted from the prolonged pressure. There was some hemorrhage, and the patient had a violent attack of puerperal fever, which was epidemic in the hospital at the time, but finally recovered.

CASE III.—*Face-presentation. Chin behind and to the right side. Failure of attempts at flexion, rotation, and version. Application of Hodge's forceps, and failure to produce rotation or to deliver by traction. Introduction of hand; elevation and flexion of the head. Delivery of a living child with the forceps.*

Mrs. P., æt. about 30, was seen in her sixth confinement in consultation with Dr. Elliot Richardson, at 9½ A.M., on June 23d, 1871. She had reached full term, and labor had commenced some time during the previous day. The first stage terminated between 11 and 12 o'clock on the preceding night. When Dr. Richardson reached her the face was presenting

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with the chin to the right sacro-iliac junction. The pains were strong, and continued so throughout the night.

When I saw her at 9.30 A.M. the next morning her condition was fair, but the position remained unchanged. Her pains were moderately strong, her mind was wandering, and she was fearful that her labor would terminate badly. The face had descended almost to the inferior strait, and the anterior lip of the uterus was compressed between the brow and the symphysis pubis. There was plenty of room posteriorly, but the forehead was tightly jammed against the left anterior portion of the pelvis. An attempt was made to transform the face-presentation into one of the vertex by pushing up the chin and bringing down the brow. This failed, although the whole hand was introduced into the vagina, because the chin caught against the brim of the pelvis behind, and the forehead would not descend in front. We likewise failed to rotate the chin in front, though the hands and vectis were both used. Three hours had now passed and the patient was both alarmed and exhausted. Version could not be performed, so Hodge's forceps were applied, and an attempt made to force rotation. Traction was continued for nearly an hour without effecting anything. Almost in despair, I passed the whole hand into the pelvis, placing the thumb over the brow and the fingers over the superior maxillary bone, and pushing forcibly upwards, the head was easily raised above the brim of the pelvis. It was then flexed without any difficulty, and a mento-posterior position of the face was converted into an occipito-anterior of the vertex. As the pains had almost ceased, Wallace's forceps were applied, and at 1 P.M., a few minutes later, the child was born. It was of average size, was almost still, but after a little effort was fully restored. The mother recovered without any unfavorable symptoms.

CASE IV.—*Right occipito-posterior position. Prolapse of the Cord. Pelvic deformity. Failure to deliver after violent efforts with the forceps. Craniotomy. Rotation with the hand, and delivery with the forceps.*

Mrs. O——, a primipara, aged about 20 years, was seen in consultation with Dr. James F. Wilson, at 4 P.M., July 10, 1873. Labor had commenced early on the previous day. The bag of

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waters ruptured early on the morning of the 10th. In the afternoon the cord prolapsed opposite the sacro-iliac junction, and Dr. Wilson was unable to return it. The head was in the right occipito-posterior position and well flexed. The pelvis was narrow, the conjugate diameter scarcely exceeding three and a half inches. When seen at 4 P.M. the os was dilated, the large firmly ossified head at the superior strait, a large loop of cord prolapsed, the vagina was hot and rather dry, the skin moist and warm, pulse frequent, and patient anxious about the result. She was immediately placed upon her hands and knees, but though prolonged and careful efforts were made to reduce the cord, we failed. She was then allowed to lie upon her back, and seizing the cord it was carried upwards into the uterus, it having been decided to place it if possible out of danger, and then to go on and seize the feet, turn and deliver. The right hand was used in the manipulation, and when it was in contact with the thorax of the child, the whole of the cord being within the cavity of the uterus, a strong convulsive movement of the infant was felt, and immediately afterwards the funis was perfectly flaccid in my fingers. It was too evident that the child was dead, and it was determined at once to apply the forceps and attempt to deliver.

Simpson's instrument was used, but the utmost force which Dr. Wilson could exert did not move the head in the slightest. The effort was continued as long as was deemed safe, when, the child being dead, it was determined to perforate. This was done about 6 P.M. The brain was cleared out, but delivery could not be affected by powerful traction either with crotchet, cranio-clast, or forceps. The upper portions of both parietal and occipital bones were pulled away with Meigs' forceps and the cranio-clast, but without enabling us to drag the head through the superior strait. The front portion of the head overhung the pubic bone to such an extent that we could not tear it away with these instruments, and for the same reason it was impossible to bring the chin down and to convert it into a mento-anterior position of the face, so that the latter could be crushed with the cranio-clast. No cephalotribe was at hand.

It seemed almost as if we would fail to deliver, when, with Dr. Wilson's concurrence, I determined to resort to the manipulation which has been described. The head was carried above

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the brim, flexed, and the occiput rotated in front, after which Wallace's forceps were applied, and a few minutes before midnight the child, which was a large one, was dragged into the world after severe traction.

The patient suffered from retention of urine, slight abdominal tenderness and pain for a few days, but recovered perfectly.

The success of an attempt to perform this manipulation depends in a great measure upon thorough etherization of the patient. When the woman is entirely relaxed by the anæsthetic, it is very surprising what can be done by forcibly pushing the head upwards. Not only does the child ascend, but if the lower portions of the uterus have been carried with the head into the cavity of the pelvis, it may be lifted with its contents above the pelvic brim, when the latter become movable and easily manipulated. Both in the pregnant and unimpregnated women the degree of stretching and movement of which the generative organs are capable when the patient is completely anæsthetized, appears very remarkable to one who has never employed this important agent in such cases. Not only may the womb be depressed, as has been done during amputation of the neck of the organ, but it may be pushed upwards and the vagina stretched till it is above the brim of the pelvis. This was fully illustrated in the case of face-presentation which has been related. The same thing in the unimpregnated woman was illustrated with equal force after the preceding remarks had been written. A patient with a tumor which was lodged, and apparently fixed in the cavity of the pelvis, was thoroughly etherized, and the left hand, as recommended by Prof. Simon, was introduced into the rectum to make an exploratory examination, when the tumor was raised out of the pelvis, after which it could be pushed almost anywhere in the lower part of the abdomen. Not only was this the case, but the womb was likewise pushed upwards by the hand in the rectum, until the fundus, which could previously be felt in the usual position just below the upper margin of the pubis, was now just below the umbilicus, and the os uteri could be felt above the brim through the thin abdominal walls. The os was thus lifted above the point previously occupied by the fundus.

One other point is worthy of mention in connection with this

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use of the hand to produce anterior rotation in occipito-posterior position of the vertex. It is that in cases in which the body of the child cannot be rotated in the uterus by external manipulation, the head may be turned and the occiput brought in front without any great danger to the child. It is certainly less dangerous than Simpson's manipulation with the forceps, because, in the former, the hand, the most delicate and useful of all instruments, is the agent employed.

The study of the literature of obstetrics, so far as the writer has been able to complete it, has failed to reveal any account of the manipulation which has been described, yet a point to which attention has been directed can scarcely be deemed strictly original, since obstetricians have at various periods, from the time of old Cosmo Viardel, directed attention to the use of the hand in obstetrics. It is only the new combination of various manipulations which have been recommended at various periods to which attention is directed.

1513 ARCH ST., PHILADELPHIA, *Nov.* 1*st*, 1878.

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

REPORTED BY J. V. INGHAM, M.D., SECRETARY.

STATED MEETINGS, OF JUNE 4TH, AND JULY 2D, 1871. DR. ALBERT H. SMITH, PRESIDENT, IN THE CHAIR.

CYST OF BROAD LIGAMENT.

DR. J. V. INGHAM presented a specimen of cystic degeneration of the organ of Rosenmüller. The cyst was connected with the broad ligament of the left side by a fibrous band. The cyst, which was as large as an orange, was situated at the distal extremity of the ovary. There were cysts also in the ovaries.

DR. GOODELL remarked that there was a difference of opinion with reference to the origin of these cysts of the broad ligament. One cause might be the dilatation of the tubules of the parovarium. Another was probably the degeneration of the vesicle of Morgagni. The peculiarity of the cystic fluid is its high refractive power in the transmission of light. He did not think it possible to decide which of these was the true origin of this cyst.

On motion, a Committee was appointed by the President to examine and report on this specimen.

REPORT OF THE COMMITTEE.

The Committee to whom was referred the specimen of cystic tumor, presented by Dr. Ingham, report that they have examined the specimen, and find that the tumor was situated between the layers of the broad ligament below the fallopian tube, and extended from its fimbriated extremity to the ovary. The contents of the cysts were very limpid; but a minute examination could not be made, because of changes caused by the fluids in which the specimen had been placed for preservation. In the broad ligament of the opposite side the organ of Rosenmüller could be traced in a corresponding position, but no other evidence of its existence than this cyst was found on the side occupied by the tumor.

The Committee are of the opinion that the position of the cyst, its contents, and the apparent absence of a normal paro-

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varium, indicate that the tumor is a cystic degeneration of the parovarium, or organ of Rosenmüller.

H. Lenox Hodge.
Wm. Goodell.
James V. Ingham.
W. F. Jenks.

Dr. Goodell then exhibited some fluid which he had removed from a lady on the previous day. Thirty-four pints were drawn off. From the very marked fluctuation of the tumor, from the scaphoid condition of the belly after the operation, and especially from the remarkably clear and limpid character of the fluid, he had diagnosticated the case to be one of cyst of the broad ligament. In this opinion Dr. Hodge, who was present at the operation, concurred. In these cysts one tapping usually suffices for a cure; but this was the second tapping to which the lady had been subjected. If the cyst refilled it was his intention to adopt Dr. Atlee's plan of snipping off a piece of the cyst-wall, and of making the peritoneum absorb the fluid. Its bland character precludes the hazard of peritonitis.

CRANIOTOMY IN A CONTRACTED PELVIS.

Dr. Parish then read an account of a case of craniotomy. (See American Journal of Obstetrics, November, 1874, p. 494.)

In the discussion that ensued, Dr. J. S. Parry remarked that the history of this case confirmed his opinion as to the advisability of Cæsarean section in this patient. The cause of death here was that form of puerperal fever now prevailing in this city, characterized by the presence of diphtheritic deposits on the vulva, vagina, etc.

Dr. Goodell, after complimenting Dr. Parish upon the pluck he showed in this his first case of craniotomy, remarked that he could not agree with Dr. Parry. Cæsarean section should never be resorted to whenever there was a chance of a delivery *per vias naturales*. Statistics are most untrustworthy. The fatality attending the operations of craniotomy and cephalotripsy is in a great measure due, not to the operation itself, but to the delay on the part of the medical attendants. For these operations are rarely undertaken until the child is dead and the mother in an exhausted condition. This false philanthropy is the cause of death. Even in the present case, had the forceps not been used, and had the head been at once opened and broken up, the woman might at least have escaped the vesico-vaginal fistula.

Dr. Parish replied that the fistula could not be attributed

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to the use of the forceps, for no long-continued traction was made with that instrument, since it was employed simply as a means of determining the amount of contraction. Nor could it be attributed to bone-spiculæ, for he took good care to preserve the scalp. He thought it was due to the traction made by the embryulcia forceps.

Dr. Parry thought that the subsequent inflammatory trouble could not have caused the fistula, for too short a time had elapsed. But it could have been caused by the rapidly erosive action of a diphtheritic sore. He called attention to the fact that in puerperal inflammations suppuration was most commonly on the left side. This had been attributed to the left lateral position usually assumed by the parturient woman.

The President suggested bone-spicula as the probable cause of the fistula. In this case the necessity for rapid delivery was urgent. But in most cases perfect safety is secured to the maternal passages by a slow delivery. The head would then become wire-drawn or mould itself to the inequalities of the bony canal.

Dr. Ludlow recalled some experiments that he had made with the late Prof. Hodge, in which fœtal heads were completely crushed by repeated applications of the cephalotribe, and yet no bone-spiculæ pierced through the scalp. He was therefore inclined to look with much favor on that instrument in desperate cases of pelvic deformity.

Stated Meeting, August 6th, 1874. Dr. A. H. Smith, President, in the Chair.

CHOREA IN PREGNANCY.

Dr. Taylor stated that he had a case of chorea in pregnancy about which he felt very anxious. He therefore asked for information concerning the prognosis and the treatment of the disease.

Dr. Goodell replied that this complication in pregnancy is a very fatal one. He knew of no specific, but would be inclined in a desperate case to induce labor as early as is compatible with the safety of the child. He had seen but one case of chorea in pregnancy, and never wished to see another. Its history he had reported to this Society (see American Journal of Obstetrics, May, 1870, p. 140).

Dr. C. R. Prall then read the following history of a successful case in point:

"On the 21st day of April, 1873, I was called to see Mrs. S——s, 23 years old, in her first pregnancy, twenty-five days be-

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fore confinement. She had had chorea from the commencement of her pregnancy; at first mild, but gradually increasing until it became so exceedingly severe that when I first saw her I had very little hope of her recovery. Almost every muscle seemed to be in a state of extreme agitation. Her upper and lower extremities were so completely beyond her control, that to keep them from being injured against surrounding objects it was necessary to have them constantly restrained by two assistants; and then, as she was sitting on a sofa her body was so violently moved about that her head was several times brought forcibly against the wall before I could have her removed to a place of safety. She was then carried to an adjoining room and placed in the middle of a large bed, and in my examination I discovered that her movements had been so constant and long continued that the skin was worn off the elbows and knees and that the clothing was stained with blood. Her pulse was accelerated, but otherwise natural; tongue coated; bowels constipated, and appetite not much impaired. I ordered a bottle of citrate of magnesia at once, and bromide of potassium grs. xx. + elix. valerianate of ammonia f ʒ j. every two hours.

"On the morning of the 22d, found her without any improvement. The bowels had been moved. Ordered the bromide and valerian to be taken four times a day, before meals and at bedtime, and zinci. sulph. grs. ij. three times a day after meals, which was increased to grs. iv. on the 23d, and to grs. vj. on the 24th, and to grs. viij. on the 25th, and to grs. ix. on the 26th, and to grs. xij. on the 27th, and to grs. xv. on the 28th, which last increase was rejected by the stomach on taking the second dose. From that time the symptoms of chorea declined so rapidly that in twenty-four hours she could use her hands to feed herself, and even to sew, and in a few days she went about as well as any other person. On May 16th she had a very easy, natural labor, and a speedy recovery.

"I did not hear from her chorea again till May 25, 1874, in another pregnancy, 115 days before confinement. This time her symptoms were not so severe as they were when I treated her before, which can be accounted for by my being called so much earlier in the pregnancy, as her friends informed me that she was going on with a gradual increase precisely as she did the first time. I gave her the zinc treatment again, with the same good result. It was also necessary this time to increase the dose to grs. xv. three times a day before the disease began to decline; and then, as before, the stomach rejected the medicine on the second full dose. After which, on both occasions, the dose was gradually reduced to grs ij., and then stopped. Large doses of the zinc could not be retained in any other form

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than in pill, nor at any other time than after a full meal. And in the last attack, by commencing with the zinc alone, I found that the stomach would not bear the increased dose without a dose of the bromide half an hour before eating.

"This patient had chorea at the age of thirteen years, and her catamenia made its first appearance shortly after the chorea commenced.

"The disease then continued about two years. In that time she had a great many doctors, but does not remember their names, nor has any idea of what cured her. She never had rheumatism.

"My attention was directed to the treatment adopted in this case by reading the cases communicated by Mr. H. T. Butlin, in the January and February numbers of the *London Lancet* of 1872.

"I believe the bromide of potassium did little or nothing in this case, aside from its helping the stomach to retain the zinc; for I know she had the bromide well tried in the early stage of her first pregnancy, and it failed."

STATED MEETING, SEPTEMBER 3. DR. A. H. SMITH IN THE CHAIR.

UTERINE POLYPUS.

DR. HORACE WILLIAMS related the history of a case of uterine polypus, which presented some interesting clinical features.

A young lady was brought to him, complaining of acute suppression of the menses, she having missed two monthly periods. Her menstruation previously had been normal.

The two periods passed over without any other indication than simple suppression, but on the week following the time on which the second was due, she complained of backache and slight leucorrhœa. Soon after this she became unwell, with a free flow and violent tenesmic pains.

There was great prostration, with abdominal pain. When he saw her again she was weak, and the discharge was brownish in color and somewhat offensive. An examination being refused, he ordered an antiseptic wash. Two weeks passed by, during which she had hectic fever and symptoms of blood poisoning. An examination was now permitted, and he found resting in the vagina a polypus, part of which was in a sloughing condition. It bled freely to the touch.

After removing it with an écraseur the patient did well. The point of interest in the case was the two months' suppression of menses, like that of pregnancy, followed by symptoms resembling an abortion of two months, also followed by symptoms like those caused by a retention of a part of the ovum.

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The suppression of the menses in this case, Dr. Williams thought, was due to the ball-valve action of the polypus previous to its expulsion from the uterus. It was attached by a single pedicle to the inner os.

Dr. Charles H. Thomas recalled the case of a lady who had had several miscarriages with an excessive flow each time. The ovum always came away complete, but the discharge never ceased until several days afterwards, when, according to the patient's account, a fibrinous clot came away. Four days after the last miscarriage Dr. Thomas detected a polypus attached by a slight pedicle to the posterior wall of the uterus near the fundus and removed it with the forceps. The patient told him that after each miscarriage, several similar masses came away from her.

Dr. H. L. Hodge did not agree with Dr. Williams in his explanation of the suppression of the menses in his case by a mechanical cause.

In the cases of retention of menses by an obstruction which he had seen, there were always labor-like pains caused by the efforts of the uterus to expel the accumulated discharges. He related a case in which he was called upon to operate for a supposed polypus of the uterus, but upon examination he found that the patient was pregnant, no polypus existing.

Dr. Williams also gave an account of a case in which a polypus coexisted with pregnancy. At about the third month of gestation he was called to see the patient on account of symptoms of miscarriage. On examination he found a small polypus attached to the cervical canal. At that time he had brought the question of operation before the Society, and its opinion was unfavorable to the removal of the polypus.

He then made a strong application of tannin to the polypus, so that it became yellow in color, and after this there was no further bleeding.

In a few days the patient noticed a peculiar discharge. Two months latter there was no trace of the polypus.

Dr. W. H. Parish gave a detailed account of a case of menorrhagia in an unmarried lady of 35 years of age. The patient had profuse continuous hemorrhage lasting five weeks, which was not controlled by the usual remedies, including the use of the tampon. A weak mixture of Monsel's solution and water had little or no effect, but by washing the cavity of the uterus with a mixture of equal parts of the Monsel's solution and water, the bleeding was arrested. The point of interest to him was the strength of the solution used, and without bad effect.

Dr. Prall said that he was in the habit of using the half strength Monsel's solution, and he had recently used it in its

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full strength without any bad symptoms resulting. He had never seen any slough from the use of the pure Monsel's solution. The moment the liquid touched the bleeding surface a coagulum was formed, which prevented the absorption of the liquid. He had never seen any clot form in the veins.

Dr. Hodge had seen bad effects from the use of the Monsel's salt, both in a dry state and in solution. In the case of a young girl with menorrhagia, the injection of a dilute solution into the vagina was followed by inflammation of the vagina and abscess of the labia majora.

Dr. McCall expressed similar views to Dr. Hodge.

Stated Meeting of November 5th, 1874. Dr. Albert H. Smith, President, in the Chair.

CASE OF HYDATIDIFORM DEGENERATION OF THE CHORION.

Dr. R. A. Cleemann exhibited the specimen and read the following history of a hydatidiform degeneration of the chorion:

"This small portion of a large vesicular mole was removed from the cavity of the uterus of a patient under my care. The specimen has lost, in some measure, the very characteristic appearance it at first presented, owing to the mode of its transmission to my office—it being simply wrapped in a bit of newspaper—and to the delay of nearly twenty-four hours, which occurred before it was placed in the preservative solution of chloral hydrate. This appearance is generally described as racemose, or like that of a bunch of white currants, or it may be more fitly represented by rows of colorless oval beads of varying sizes, closely strung and tangled together.

"Instances in which the chorion has undergone the hydatidiform degeneration are not very unfrequently met with, yet they are rare enough, and have sufficient clinical interest to justify my giving to the Society a brief record of the case from which this specimen was obtained.

"I was called in haste to visit the patient on the night of October 11th, 1874. She proved to be a young girl, of small and delicate frame, presenting an almost bloodless and anxious countenance. Her pulse was running 120–125 beats to the minute, while she was complaining of acute and nearly constant pain in the abdomen: her lower garments were wet and stained with blood. It was stated that she was only sixteen and a half years old, but had been married twenty-one months. Eleven months after marriage she had been delivered, after a tedious labor, of a male child, of large size, but probably feeble, since it lived only three weeks. Subsequently, her health had been good and the catamenia regular for the six successive periods,

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after which the flow had ceased, leading her to believe that she was now in the fourth month of a second pregnancy. Two months after the arrest of the menses, the patient noticed that her abdomen was enlarging, but had no other evidences of her being with child. Nothing unusual, save a constant drowsiness, presented itself, till two weeks before my visit, when profuse metrorrhagia suddenly came on at night, without pain, while she was lying quietly in bed. The 'flooding' had continued ever since, in considerable quantity, without her recognizing any watery discharge, but during the last three hours intense abdominal suffering had been superadded.

"Placing my hand on the abdomen, I discovered it to be hard and exceedingly sensitive, and enlarged to the size it attains at the seventh month of utero-gestation. A vaginal examination revealed the lower segment of the uterus expanded, hard, but yielding an obscure sense of fluctuation, and the cervix undistinguishable; the os dilated to the diameter of an inch, and occupied by a ragged-feeling mass which suggested a degenerated placenta. The examining fingers were slightly stained with blood. Dilatation of the os progressed rapidly, and when a diameter of 2½ inches was reached, a large quantity of cystically degenerated chorion, more in bulk than a full-sized placenta, came away; smaller masses with blood clots, old and more recent, followed this, with the assistance of the fingers, the introduction of which within the os gave rise to great pain. The uterus, still so sensitive as to make firm pressure unsupportable, seemed now to be about the size of a small fœtal head, and felt hard, while the os had become firmer, and presented nothing within its grasp; a very small amount of watery blood escaped from the vagina, and the pain had ceased. Under these circumstances a binder was applied, and further manual interference discontinued; a small tablespoonful of wine of ergot, with thirty drops of laudanum, being given to the patient. She soon slept, but would wake at intervals with slight pain, while the same discharge came slowly away. During the two subsequent hours I remained by her, fearing an access of dangerous hemorrhage, and during this time the dose of ergot was repeated twice, and once more on my leaving, on this occasion with an additional dose of laudanum. The next morning there was some febrile reaction, the pulse being still at about 120. The ergot had been given at intervals of two hours with occasional doses of the anodyne and stimulants. In the following days she took iron and good nourishment, and with the exception of severe cephalalgia did well, making a rapid recovery. This headache was obstinate, resisting several remedies, but yielding finally, apparently to large doses of quinia. The

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uterus diminished gradually in size, always remaining tender, and the watery discharge, containing at first small clots—which were not examined, but were probably fragments of the decidual membranes—had ceased in six days, when it returned for one day only purulent and offensive. During the second week she left her bed, and by the third was attending to some household duties, declaring herself quite well.

"The nature of the hydatidiform masses, such as the one before us, in so far as they are the result of an enlargement and distention of the young villi of the chorion, is now well established; but the influences which lead to the striking alteration are still obscure. Dr. Graily Hewitt[1] supposes the degeneration due to the cessation of life in the fœtus, while its membranes still maintain their nutritive hold upon the walls of the uterus. Under these circumstances the assimilative materials yet find their way to the ovum, but having lost their normal end in the development of the embryo, are expended in this unnatural growth. Following this theory, which probably explains correctly the phenomena in a certain number of instances, may we not find the remote cause of the abnormality, in this special case, to be the early marriage of the patient, whose immaturity for child-bearing did not permit the full development of two children in such closely recurring pregnancies?[2]

"The most important diagnostic symptoms observed in the case were the early and rapid enlargement of the abdomen, and the sensation communicated by the presenting object which I have described as ragged: these served to exclude "placenta prævia" for which vesicular mole has been mistaken.

"There is so much satisfaction in cases of abortion with much hemorrhage, in sweeping with the finger the uterine cavity till it is free, that the temptation was strong to employ the same manœuvre here; but it was rejected on account of the great sensibility of the womb, combined with the exhaustion of the patient. The administration of ether seemed to be undesirable from the subsequent risk of secondary hemorrhage. In the more tedious method of expectancy and ergot-giving, which was adopted, the tampon was omitted on account of the size to which the uterus had attained."

Dr. Cheston Morris asked whether Dr. Cleemann had noticed any remains of the fœtus.

[1] Trans. Obst. Soc. of London, vol. i., p. 258.

[2] Dr. J. Matthews Duncan quotes Aristotle in support of the opinion that very young mothers bring forth puny children, and in confirmation of so old a view adduces a table from the Journal of the Statistical Society of London, showing a greater mortality among the offsprings of such mothers as compared with that of those somewhat older (Fecundity, Fertility, Sterility, etc., pp. 286–287).

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Dr. Cleemann replied that he had not.

Dr. Morris then referred to a case in which a cystic mass had been expelled at about the fifth or sixth month of pregnancy, the fœtus being felt within the walls of the cyst.

Dr. Cleemann remarked that instances had occurred of children born alive in conjunction with this form of degeneration of the placenta.

The President remarked that in the majority of cases no fœtus has been found, and this fact is important in view of the question as to whether the hydatid mole is an evidence of pregnancy or not. Some years ago Dr. Moore Madden doubted the fact that this mole is an evidence of pregnancy. We can as easily account for the existence of a degenerated chorion as for the presence of a dermoid cyst without the existence of pregnancy. This may be a question bearing upon the purity and chastity of the woman.

Dr. Cleemann said he believed that the weight of testimony was against the view presented by Dr. Smith. As to the dermoid cyst, it could not fairly be brought into analogy with the vesicular mole, for though the cyst contained various appendages of the skin and mucous membrane, such as hair and teeth, these bore no determinate relation to each other or to the parts with which they are normally connected; while the altered chorion was found in its natural situation in contact with other fœtal membranes, without other eccentric development. The logical inference was, therefore, that in the latter case, the usual sequences had occurred up to the formation of the chorion, which would include natural conception.

Dr. H. Lenox Hodge then read a paper of the late Prof. Hugh L. Hodge upon the forceps and cephalotribe.

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CLINICAL MEMOIR ON TURNING IN PELVES NARROWED IN THE CONJUGATE DIAMETER.

By WILLIAM GOODELL, M.D.,

PHYSICIAN-IN-CHARGE OF THE PRESTON RETREAT; CLINICAL PROFESSOR OF THE DISEASES OF WOMEN AND CHILDREN IN THE HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA, ETC.

(Read before the Philadelphia Obstetrical Society, February 4, 1875.)

Although, on account of the size of her offspring, the daughter of Orchomenos died in travail; and although, as Homer sings, Latona was nine days and nine nights in giving birth to Apollo—

Λήτω δ'εννῆμάρ τε καὶ ἐννέα νυκτας ἀέλπτοις
Ὠδίνεσσι πέπαρτο;—

it does not appear that their celestial paramour devised any mode or relief for such contingencies. Nor did his ox-eyed consort, who was the tutelary divinity of pregnant women. Nor did other erring gods and goddesses, not even Latona herself, who, in the end, became a powerful deity. To Aspasia, the mistress of Cyrus the Younger, was reserved the honor of suggesting the induction of labor in women unfit to bear; and

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to Moschion, a physician of the second century, that of resorting to version whenever the labor is a difficult one.[1]

These golden hints appear, however, to have faded from view; for in the fifth century, we find Aëtius, the first of Christian medical writers, reviving the teachings of Aspasia (*Tetrabib.* 4, *Sermo* iv., *cap.* xviii.); and, in the seventh century, Paulus Ægineta, surnamed Obstetricus from being the first "man-midwife," refuting the aphorism of Hippocrates that breech presentations are generally fatal to both mother and child. But printing was yet an undiscovered art, and these dawning thoughts lay fallow. At intervals of time, men endowed with great originality, such as Paré, Guillemeau, and Mauriceau, throw out hints that in isolated cases of labor they resorted to version; but from these scattered observations no general laws were deduced. According to Brudenell Exton (*New System of Midwifery*, 1751), even the brothers Chamberlayne gained their reputation, not so much from the use of the forceps as from the operation of version—which in their day was little known. Influenced by their example, Sir Fielding Ould (*Treatise on Midwifery*, Dublin, 1742) taught his pupils, that in contracted pelves a delivery by podalic version is easier to the mother and safer to the child. His able cotemporary, Paul De Wind of Holland (Sue's *Essais Historiques des Accouchemens*, vol. ii., p. 394), vehemently proclaimed the inferiority of the forceps to version. Even John Burton, the Dr. Slop of Tristram Shandy, so far forgot his learning and his breeding as to abuse Smellie and his forceps in a tirade, which in bitterness was surpassed only by that of the midwife and Amazon, Nihell. But the partisans of the forceps prevailed, and the manual delivery in faulty pelves appears to have been forgotten until 1847, when the genius and the enthusiasm of Simpson brought about its great revival.

Notwithstanding the weight of authority, at the present day undoubtedly leans toward podalic version in pelves narrowed in their conjugate diameter; yet the question of its utility is still an open one, and this operation has not yet become an undisputed canon of obstetrics. Men of high standing in the profession, such as Byford of Chicago, Martin of Berlin, Radford

[1] Περὶ Τῶν Γυναικείων Παθῶν, in I. Spachii Gynæciorum Harmoniâ, Argentinæ, 1597.

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of Manchester, Duncan of Edinburgh, and Depaul of Paris, look with disfavor upon it; while the great mass of the profession on this continent, influenced by the teachings of Hodge and of Meigs, and by their own unrivalled skill in the use of the forceps, regard a safe delivery of the child to be impracticable, whenever that instrument fails to extract it. In view of this perplexing discrepancy of opinion, the object of this paper will be to give my own personal experience, and to discuss the question as soberly and dispassionately as a new convert and a warm partisan can.

The advocates for the use of the forceps in narrow pelves contend—

1st. That the neck of the child cannot sustain much traction, and that, consequently, the degree of tractive force which can be safely exerted by the forceps far surpasses any extractive power which can be brought to bear upon the after-coming head.

2d. That during traction by this instrument, moulding of the head is a gradual process, and may go on in safety for an indefinite length of time. But, after version, moulding cannot take place, because death ensues if the delivery is not very rapidly effected.

3d. That when version fails to deliver, the subsequent operation of craniotomy or of cephalotripsy is a more difficult one than when the forceps fails.

These are the stock arguments against version. But the main reason which, I think, influences the profession at large against this mode of delivery, is their habitual ill-luck in ordinary breech-cases, and also their fear lest the neck should part and the head be stalled in the uterine cavity.

The arguments in favor of version may be summed up as follows:—

1st. In cephalic presentations the head usually lies in the transverse diameter of the brim, and does not tend to dip. It presents by its vault, which is, therefore, flattened out and made broader by the resistance at the brim.

2d. The forceps as generally applied catches the unflexed head usually in the occipito-frontal diameter, exceptionally in the fronto-mastoid diameter. In either case the compression made by it causes the head to bulge out laterally, hence to

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overcome this mechanical disadvantage very great brute force is needed.

3d. When the promontory of the sacrum is laterally displaced and the brim unsymmetrical, should the vertex present in the contracted side of the pelvis, it may, by traction on the proper foot, be turned around and brought into relation with the more roomy side.

4th. By version the small end of the cranial wedge—viz., the unyielding base—is the one which first enters the brim. From this mechanical advantage there is gained a maximum of lateral compression of the upper, thinner, and wider portions of the skull; in other words, the bones bend in and overlap better.

5th. Clinical observation conclusively proves that the unflexed after-coming head is nipped, not in its biparietal diameter, but in the small end of the fronto-parietal cone or wedge, viz., the bitemporal diameter, which is from half an inch to three-quarters of an inch shorter. The biparietal diameter passes through to one or the other side of the conjugate diameter. From this mechanism of descent less extractive force is needed, and the time necessary for delivery is thereby much abridged.

6th. The bilateral compression gained by version is the least dangerous to the life of the child. On the other hand, the occipital blade of the forceps may destroy life by pinching the cord when coiled around the neck, or by too great and too prolonged a pressure on the medulla oblongata.

7th. The jutting promontory so protects the cord from pressure that after version the necessity for immediate delivery is not so urgent as in ordinary breech cases.

8th. The child's neck can sustain with impunity a very great strain, and if to this be conjoined, by the hands of an assistant, a propelling supra-pubic pressure upon the vault, fully as great an extractive power can be brought to bear upon the after-coming head as by the forceps in head-first labors.

9th. Provided the brim is wide enough to admit the hard base of the skull, the operation of craniotomy or of cephalotripsy is quite as easy in the one as in the other mode of delivery. The brain can be reached by perforating the roof of the mouth, the skull behind the ear, or, what is the point of

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election, the suboccipital region. Moreover, the base can be more readily grasped and crushed by the cephalotribe. When the brim will not admit the cranial base the difficulties attending craniotomy and cephalotripsy are perhaps greater, but by no means insuperable.

10th. Since by version the narrow conjugate is traversed more quickly, the passage of the child's head is attended with less risk of injury to the mother's tissues.

11th. After craniotomy turning is often a very efficient way of completing the delivery.

12th. By the induction of premature labor conjoined with version, living children can be delivered through pelves so narrow as otherwise to demand craniotomy.

From arguments so conflicting truth can be sifted out, not by fireside theories and closet speculations, but by an appeal to bedside experience. Let us study them in that light. The following illustrative cases are not all that I can offer, but they are perhaps the most salient ones. From them I shall also exclude all cases of original breech-presentations in narrow pelves, of which I have seen several.

Case 1.—My first case of turning in a narrow pelvis was forced upon me by a prolapse of the cord. Had not this accident happened I should have resorted to the forceps. So far as the life of the child was concerned it was a failure, but in other respects it afforded me much food for reflection. A. K., æt. 25, bore her first child in 1863. She was, as she alleged, four days in labor, and had in attendance two physicians of experience. After many hours of hard tugging at the forceps they finally delivered her by craniotomy. Since that time fruitful intercourse had for six years been prevented by some one of those vile measures so much in vogue at the present day. Through very unwelcome carelessness she again became pregnant, and on March 27, 1870, fully up to term, she fell into labor and into my hands. I found the brim kidney-shaped, the promontory easily reached by my short index finger, and the unruptured bag of waters filled with a large coil of the cord. To replace this, the postural and other methods were in vain tried both before and after the membranes broke. Half an hour after the water had drained off the child was turned by the bimanual method. Much force was needed to extract the head,

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but it was not made as promptly and as efficiently as I have since learned to make it. The head passed the brim with a jerk, and was thereafter easily delivered, but the child was still. It weighed eight pounds five ounces. Here was a pelvis whose conjugate diameter measured less than 3.5 inches, and yet the delivery was comparatively easy and short. From a pretty large experience with flat pelves I was satisfied that had the forceps been applied, one hour or more would have elapsed before so large a head could have been made to pass the narrow brim—perhaps not without craniotomy.

CASE II.—On this occasion your President and I were called in by the attending physician to a desperate and ultimately fatal case of puerperal eclampsia. Vain attempts to deliver were made with the forceps. With extreme difficulty version was performed, but after its completion the delivery was comparatively easy. The child was dead, and weighed exactly thirteen pounds, being the largest one that I have ever seen. Strictly speaking, this was not a case of narrow pelvis; but it was one of disproportion between the pelvic diameters and those of the head, and as such I report it to prove the superiority of version over the forceps.

CASE III.—This case was also one of compulsion and not of choice. M. McC., æt. 27, had in her previous labor been prematurely delivered at the end of the seventh month of gestation. The child weighed less than five pounds, and yet her labor lasted over forty-eight hours, six of them being attended with great suffering and violent expulsive pains. Her physician recognized the conjugate contraction, and in her second pregnancy urged upon her the induction of premature labor. Upon her refusal to submit to this operation he declined to attend her, and she sought admission into the Preston Retreat. At 8 o'clock A.M., June 8th, 1870, after labor had lasted ten hours, I found the waters dribbling away from an unexpanded os. The head, presenting the occiput to the left ilium, could not bear upon the cervix, but rolled about upon the shelf formed by the promontory. By careful measurements the conjugate diameter of the brim was estimated at a trifle over three inches in length. At 3 o'clock P.M., finding her condition unchanged, I decided to dilate the os with the water-bags and apply the forceps to the sides of the head. While preparing to

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do so, the woman suddenly began to twitch in her muscles, to start convulsively, and to complain of blindness and intense headache. Fearing an attack of eclampsia, I decided to turn. The woman was accordingly etherized, brought down to the edge of the bed, and each hip supported by a nurse. Two fingers of the left hand were then squeezed into the os, and ultimately a third. By these, in conjunction with the external use of the right hand, version was made with so little effort that I did what I have never before nor since done; I turned the child more than half a circle and had to reverse the process. One foot having been dragged down, time was given for the os to dilate before the body and arms were brought down. By then following a method which I had previously found of advantage, and which will be hereafter described, I quickly delivered the child. It was asphyxiated, but promptly recovered. It had a deep furrow on the right side of its head, and weighed seven pounds and twelve ounces.

Case IV. was the first one in which I turned from choice. Late in the evening of January 15th, 1871, F. K., an undersized primipara, aged 31, was admitted, having already been in labor twenty-nine hours. Her last catamenia ended April 15th, so that she was fully up to term. I found the waters drained off, the conjugate diameter somewhere about three inches and a half, and the occiput looking directly towards the left ilium, but not bearing at all upon the cervix. Having lately had a series of tedious forceps cases, I felt much inclined to try version. Wishing, however, some backing, I sent for my friend, Dr. E. L. Duer, who verified my measurements and sustained me in my decision. I accordingly turned by the bipolar method, and at once proceeded to deliver. Dr. Duer pushed down the child's head from above, while I, by three short movements of traction, extracted it without the slightest delay. The child weighed five pounds and fourteen ounces, was born lusty and did well, although bearing on its right temple a slight depression, such as that great military surgeon, Ambrose Paré, aptly compared to the bruises which a silver kettle-drum receives when thrown on the ground. Nine days after, the mother accidentally discovered a dislocation of the acromial end of the left clavicle, which I should like to believe was a congenital deformity.

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CASE V.—On December 16th, 1871, E. R., a dwarf in size and in wretchedly bad health from phthisis, applied for admission to the Retreat on account of the severity of her three former labors. In her first labor the late Prof. David Gilbert, whose skill with the forceps is well known, tugged away at that instrument for five hours and delivered her of a badly marked but living child. In her second pregnancy she refused to have labor induced, and went to term. This time he kept the forceps on for nine hours, and after lashing the handles, delivered her of a dead child with its head badly crushed in. He now told her that hers were the two most difficult labors he had ever seen, and vowed never to attend her in another. Again she became pregnant, but kept this fact concealed from him until labor set in. Upon great entreaty he very reluctantly consented to attend her; had the forceps on for three hours, and delivered her of a living but small and badly marked child. Following each one of these labors a smart attack of peritonitis kept her in bed for four weeks after the first two, and for three weeks after the last one. After each one also, the catheter was needed for several days. Her husband now died, and she remained a widow for several years; then married again, and soon found herself pregnant for the fourth time.

Upon her admission I carefully examined the pelvis. My index finger easily touched the sacro-vertebral angle, and gave a length of four inches to the diagonal conjugate, and therefore one of 3.32 inches to the true conjugate. Labor was not induced, because she was very near her time. Four days later she went into a slow labor, with the occiput to the left ilium. After nine hours the membranes broke prematurely. The expulsive pains then increased in severity until in three hours more they became, as my note-book states, "terrific." Yet the os did not dilate, and the head remained movable above the brim; I therefore gave her ether, turned the child, and delivered it alive in less than three minutes after strong traction and propulsion had been begun. It was a well-nourished girl, weighed seven pounds ten ounces, and bore a deep pressure-mark in front and above the ear.

So impressed was this woman with the advantages of turning over those of the forceps, that on March 10th, 1874, she struggled against great difficulties in order to put herself again into my

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hands. She was then bed-ridden, and desperately ill with pulmonary hemorrhages and hectic fever. Her friends daily expected her death; but by tears and entreaties she prevailed upon her husband to carry her to a hack, in which, lying on his lap, she was conveyed to the Retreat. On entering the building she went off into an eclamptic fit. This time I turned through the membranes by two fingers, then ruptured them and as before forcibly delivered her of a plump and lively boy. It weighed six pounds fourteen ounces, and bore the same kind of a pressure-mark as its sister. From the former labor as well as from this one, her recovery was much retarded by her constitutional disease, but in nowise from the effects of the labor. I thought her dead and buried, when, to my astonishment, in January last she feebly walked into my room at the University and sought my advice for an abdominal tumor. My assistant, Dr. D. Bray, and myself carefully examined her. We both easily touched the promontory with the index finger, and found the tumor to be a gravid womb. She at once got an order of admission to the Retreat, and I am daily expecting her to be brought in.[1]

Case VI.—Some time in 1873, the month and day I cannot recall, my friend Dr. R. B. Cruice asked me to see one of his patients, whom he had delivered some three or four times, but always of large children, and, on each occasion, after a tedious use of the forceps. She was again in labor, and he had several times applied and reapplied the Hodge forceps; but after powerful traction the blades invariably slipped. I found a very fat woman in hard labor. The pelvis was unusually deep and somewhat narrowed. The head was perched above the brim, with the occiput looking towards the left ilium. Failing to get the blades over the sides of the head, I had to content myself with their oblique application; but the head being a large one, they did not hold well, and we therefore decided to turn. The operation of version was by no means as easy as the subsequent delivery. The child was alive and unusually large. The mother's convalescence was retarded by a sharp attack of peritonitis—then prevailing as an epidemic—but she eventually did well.

On May 5th I delivered this woman for the third time, by version. The child was alive and weighed eight pounds and four ounces.

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CASE VII.—Not long ago I exhibited at a meeting of this Society the body of a child which I by version had a few hours previously delivered through a very narrow pelvis. The remarks which I made on that occasion were not reported in the *Transactions*, because due notice of the intended presentation of the specimen could not be conveyed to the members in advance of the meeting. This case I shall therefore now report at length.

On March 13th, 1874, M. S., a native of Germany, sought admission in the Retreat on account of her previous very difficult labors. She was forty years old, and had been married twice in eighteen years. Both she and her twin sister were reared on the bottle; they cut their teeth very late, and neither could stand on her feet until after she was two years old. Both married, and both became pregnant; but the sister could not give birth to her child, and died after being delivered by the Cæsarean section. M. S.'s first labor took place in Germany, the child presenting by the head. After many hours of hard labor, the midwife in attendance foreseeing trouble sent for a physician, who broke up the vault, but failed to extract the child. A second physician was called in, and finally three more before she was delivered. So much difficulty was experienced that one arm was torn off with the blunt hook.

Her second labor took place also in Germany. The fœtus could not have been much older than the fifth month of utero-gestation; for, according to her description, "it had no nails on its fingers or on its toes," yet the labor was a very tedious one. Her husband now dying, she remained a widow for a number of years, then married again, and emigrated to this country. Her third labor happened in a small hamlet in the interior of Pennsylvania. The attending physician being too far removed from any other to call in help without much delay, pluckily took charge of the case single-handed. After breaking up the head and working over the case for the better part of a day and a night, he succeeded finally in delivering the woman of a fœtus so mutilated as, to borrow the language of her husband, "no longer to look like a child." In 1872 her fourth labor occurred; this time in one of the suburbs of this city. The arm presented; it was torn off, and so was a leg, before the child could be turned and delivered. According to

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the husband's statement, no instruments were used, yet the child's head was crushed in.

She told me that her catamenia were last seen in the middle of June, and that she was daily expecting her confinement. Owing to this statement, and also to the prevalence in Philadelphia of an epidemic of puerperal fever, labor was not induced, as it should have been. On March 31st, at 10 A.M., she fell into labor, and I now for the first time examined her pelvis. The head presented transversely, with the occiput looking towards the left ilium. With my index finger, Earle's pelvimeter, a carpenter's rule, and a pair of calipers, I obtained the following measurements, to which, for the sake of comparison, Schroeder's measurements of the standard pelvis are appended :—

	Pelvis of M. S.	*Standard Pelvis.*
Between crests of ilia	9.5 inches	10.75 inches.
External conjugate	6. "	7.8 "
Diagonal conjugate	3.5 "	5.01 "
True conjugate[1]	2.82 "	4.33 "

Having satisfied myself that the child was rather under than over the average size, I decided to turn. After ether was administered, I passed in my left hand and made a more careful examination. The transverse diameter of the brim seemed sufficiently ample, but, to my surprise, I could not pass the breadth of my hand through the conjugate without painful squeezing. Now I happened to know that my hand, with some compression, measures just 2.5 inches across the knuckles. To explain the discrepancy between my outward measurements and this internal one, I made further exploration, and found it to be owing to two sharp ridges of bone projecting inwardly along each edge of the pubic symphysis. This somewhat staggered me in my intention to turn; but, upon reflecting that in her last labor, that of an arm presentation, the head was not perforated; and also, that from the shallowness of the pelvis, the difficulties of craniotomy would not be much enhanced, I decided to go on. I turned through the bag of waters, then broke it, and seized both feet; but found there was not room enough to bring them down. I therefore let go the right foot

[1] The true conjugate is found by subtracting Schroeder's correction of .68 of an inch from the diagonal conjugate.

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and coaxed down the left one by hooking two fingers over the instep. Very powerful traction was needed to pull the half-breech and the chest through the brim. Finding the child still alive, I at once brought down the arms, and proceeded to extract the head. By a propelling power of about fifty pounds on the vault of the head, and a tractive weight of not less than one hundred and twenty pounds on the child's neck, aided finally by a pump-handle movement of traction on its legs, a dead child was born in exactly twenty minutes after the rupture of the membranes. Its neck was unbroken, but there was a vertical groove on the pubic side of the head, and on the opposite side a deep depression and fracture of the parietal and frontal bones. The bottom of this indentation lay above the ear, but in front of it and in a line with its tragus. The bitemporal diameter at the seat of fracture measured 2.5 inches. The child weighed six pounds twelve ounces. The woman did not need the catheter, was up and dressed on the fifth day, and left for home on the twelfth. Had the cephalic presentation been retained, and craniotomy been resorted to in this case, the operation would, without doubt, have been a tedious one and perhaps a dangerous one.

CASE VIII.—Early in July, 1874, E. B., a very short woman, aged 18, and two years married, applied in her second pregnancy for admission to the Retreat on account of her previous difficult labor, which had lasted three days. Three physicians were in attendance; two of them men of large experience. After repeated and prolonged trials with the forceps, they finally delivered her by craniotomy; but not soon enough to prevent the mishap of a large vesico-vaginal fistula. The excoriation of her person from the constant dribbling of urine, her nervous apprehension and dejected appearance, made her a very pitiable object. Her catamenia ended on November 28th, 1873, and she was therefore urged to come in at once, in order, if needful, to have premature labor induced. This advice, as I afterwards learned, frightened her, and she went home with the intention of staying out until labor set it. Meantime I daily expected her to enter the building, and on that account kept putting off my summer vacation. On the afternoon of August 13th, my friend Dr. Jacob Roberts, who had kindly undertaken to look after my patients during my absence, called

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to ask why I did not go away. While I was explaining to him the cause of my stay in town, the door-bell rang and the woman herself came in. Finding her in labor and the os well dilated, I at once impressed Dr. Roberts into service and put her under ether. The vagina was somewhat narrowed by a cicatricial band. The conjugate was over three inches in length, but under three and a half. A closer measurement than this I cannot give, because I unfortunately neglected to verify my finger measurement by a carpenter's rule. The pelvis was uniformly contracted; yet there seemed room enough in the bisiliac diameter to admit the occipito-frontal diameter of an average child's head, and I accordingly decided to turn. As soon as the arms were brought down, Dr. R. made suprapubic pressure with all his might, while I threw on the child's neck all of my weight possible in a bent posture. A distinct snap of some cervical structure was felt and heard. In less than it has taken me to describe the process, the head bounced out of the grip of the brim. After a short but anxious detention at the cicatricial band, a living and lusty child was born. It weighed five pounds six ounces, and, apart from a slight depression on the side of its head, appeared none the worse for the rough treatment it had received. As soon as the mother had recovered her senses, and had heard the cries of her child, she seized my hand in both of hers and covered it with kisses. I mentioned this incident, not from any lurking feeling of sentiment, but from a wish to show how vivid was the memory of her former labor, and how keen was her sense of gratitude. The extractive power applied to this case, I rate at not less than 200 pounds. Of this amount Dr. Roberts exerted about 90 and I not under 110 pounds. The necessity for this great force was owing, not so much to the narrow conjugate, as to the general contraction of the pelvis. The mother's convalescence was so prompt that on the fifth day she was dressed, and on the twelfth she went out as a wet nurse.

Case IX.—Since this paper was read before the Society, the following case has happened to me. Late in the summer of 1873, E. O'N. æt. 32, fell into labor with her first child. Dr. James F. Wilson, being in attendance, put the forceps accurately on the sides of the child's head, and, for an hour, pulled away in vain. He then sent for Dr. J. S. Parry, who arrived

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at 5 o'clock P.M. After trying for several hours to deliver her with the forceps, they succeeded finally at midnight, after a tedious craniotomy operation. I give the names of these gentlemen as a sufficient voucher to the members of this Society that the fullest toil of service was exacted from the forceps. The woman's water had to be drawn off twice daily for two weeks thereafter, and her convalescence was a slow one.

On the 10th of February, 1875, she again fell into labor, and Dr. Wilson asked me to see her. We found the expulsive pains very severe, the water drained off, the os dilatable, the head movable, and the vertex to the left ilium. A very careful examination gave a diagonal conjugate of 3.5 inches, making the true conjugate 2.82 inches in length. At 10.30 o'clock P.M. the forceps was very accurately applied by Dr. Wilson to the sides of the head. For precisely one hour he and I, by turns, tugged faithfully at the handles without gaining the slightest descent. In order to get the full benefit of the woman's expulsive efforts, ether was withheld. At 11.30 o'clock the forceps was removed, ether now given, and the child turned. Very unfortunately the feet came down astride of the cord. This mishap made me hurry up matters, and in my haste to deliver the pubic (right) arm I broke the clavicle. Dr. Wilson, who was supporting one of the woman's knees, made strong supra-pubic pressure with one hand, while I put on the neck a few pounds more than half the weight of my body. Within two minutes after the arms had been brought down, and before the clock struck twelve, the child was born. It was asphyxiated, but soon began to cry, and weighed eight pounds six ounces. Adjacent portions of the frontal and parietal bones above and in front of the left ear were greatly flattened. In the centre of this area was a spoon-shaped depression with probable fracture into which I could lay my thumb. Fourteen hours later Drs. Wilson and R. G. Curtin met me at the house of the patient. She was doing well and had passed her water. In spite of its concavo-convex head, the child seemed lively enough. At that visit I measured the diameter of its head at the site of the fracture. Although the bottom of this lesion had now become very nearly flush with the flattened surface, and the latter had very appreciably rounded out, the calipers gave a measurement of 3.15 inches. A smaller

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measurement than this could have been got, for the bones were very yielding, but the child winced at the gentle contact and I did not dare to use the slightest compression. The clavicle was dressed by a pad in the axilla, and by three adhesive straps. By the evening of the 27th inst., the bones were so well knit that all the dressings were removed. At this date the left side of the head was still more flat than its fellow, but the difference was not so marked. With the exception of a strain of the right hip-joint, caused from spreading the thighs too widely while the forceps were in use, the mother did well.

Honesty demands that I should now relate a case of failure to deliver by version. It is thus far my only one. C. K. was for the first time delivered in December, 1873, by a skilful physician, after an extremely difficult forceps labor. The child was dead; its face and skull so crushed in that the husband would not permit his wife to see the body. Becoming again pregnant, she fell into my hands. At 10 o'clock P.M., December 19th, 1874, labor began. At 7 A.M. of the next day, the waters gushed away from a well-dilated os. Yet after an hour and a half of strong pains the head did not offer to engage, but remained perched so high up that, by introducing two fingers, I could just touch it. The woman begged so hard not to be anæsthetized, that I was weak enough to yield to her wish. The parts were consequently too sensitive to permit accurate measurements. Misled by finding the conjugate fully 3.5 inches in length, I overlooked a uniform contraction of the whole pelvis, and did not discover my mistake until it was too late to mend it. The head lay in the first position of the vertex, with the posterior fontanelle so high that the introduction of four fingers was needed to reach it, and yet it was lower than the anterior fontanelle. By burying the lock in the vagina, the forceps was readily applied obliquely, but the depth of the pelvis and the woman's resistance prevented an exact biparietal application. Strong traction for half an hour doing no good, the child was turned. The half-breech was dragged through the pelvis with so much resistance, that it augured badly for the safe extraction of the head. For half an hour before the brim was passed, I hung on the neck all the weight I dared, fully 130 pounds. The trouble lay in the want of the room in the bisiliac diameter. The head neither flexed nor rotated, al-

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though the child being now dead, due moulding time was given in the intervals of traction. After the lapse of another half hour I felt the spinal column give way, and, therefore, opened the skull behind the right ear. As soon as the brain was broken up, one finger was hooked into the opening and the head turned out with so little trouble, that it was by far the easiest case of craniotomy I ever had. The child, a boy, less a few drachms of brain, weighed eight pounds eight ounces; its head was large and firm.

It is worthy of note, that in this unsuccessful case, as well as in the ten preceding successful ones, and also in others which I have not reported, all the women, excepting the one with eclampsia and the one attacked by peritonitis, recovered as promptly from the effects of the labor as if it had been a natural one. Further, in no single instance that I can recall was the catheter needed to empty the bladder.

From the foregoing cases it will also be seen that not only were infants very speedily born through narrow pelves; but that some of them were born alive after very powerful traction upon their necks, and indeed, after the forceps had failed. Five questions at once suggest themselves: What amount of traction on a child's neck is compatible with life? What amount, without decollation? What amount of extractive power can be brought to bear upon the child as a whole? What is the mode of traction? What is the limit of conjugate narrowing through which an average-sized head can be made to pass?

In a paper on the "Management of Head-Last Labors," which was read before the Philadelphia County Medical Society (*Philadelphia Medical Times*, March 20, 1875, p. 385), and of which this one is a pendant, I stated that a strong opponent to version, Matthews Duncan, had found the neck of a mature infant capable of sustaining an average weight of 105 pounds before the spinal column yields, and one of 120 pounds before the body parts from the head. That these averages seemed to me to be underrated, for, from a series of experiments, I found that, while I rarely exerted a force of over 100 pounds, I had on several occasions delivered living children after throwing on their necks a weight of 130 pounds. I further showed that Joulin, also a warm partisan of the forceps, after putting on the feet of three dead children a steady traction power, re-

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spectively of 125, 145, and 148 pounds, had dragged their heads through an artificial pelvis without breaking their necks. In that paper I cited a remarkable instance, in which a well-known physician of this city, by bracing his feet against the woman's person, had exerted his utmost strength on the neck of a child without any lesion whatever.

Twice have I delivered living children, and one of them actually lusty, after using so much force as to cause a very audible snap of some cervical fibre—an experience which tallies with that of Braxton Hicks, Steele, and of others who took part in the discussion on Dr. Duncan's paper (*British Medical Journal*, September 19, 1874, p. 384). Although exerting all the manual strength at my command, I have never seen the body part from the head. Nor in three instances, including one of breech-presentation, was there the slightest appreciable injury to the neck, although the sacral side of the head had been broken in. On one occasion only had the perforator to be resorted to, and, as before stated, it was by far the easiest operation of the kind that I ever performed. Further: it must not be overlooked that the neck of a living child is presumptively stronger than that of a dead one. For aside from the vital contractility of the muscles and the ligaments, there is on the part of the child, as my friend Dr. Isaac S. Eshleman has called to my attention, an invariable resistance to traction, whereby a very marked shrinkage takes place in the muscles of the neck.

By a series of experiments with his dynometer, Joulin[1] found that, without any brace for the feet and by pulling with the muscles of the arms alone, a robust (*vigoureux*) man can exert on the forceps a force of 113 pounds. When the feet take a purchase on the floor, a force of 150 pounds may be reached. When the physician braces his feet on the edge of the bedstead, a force of 225 pounds is attainable. Including even this last mode of traction, which, if prolonged, is hardly ever compatible with the life of the child or with the integrity of the mother's tissues, the conclusion is inevitable, that, by the conjoint use of two very nearly equal forces, viz., that of suprapubic pressure by the hands of an assistant, and that of traction

[1] Traité Complet d'Accouchements, p. 1063.

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on the body of the child by the physician, there can be safely brought to bear upon the hind-coming head an extractive force fully as great as that by the forceps on the fore-coming head. Thus, in Case VIII. Dr. Roberts and myself together exerted a force of certainly not less than 200 pounds. In Case IX. Dr. J. F. Wilson's *vis a tergo* and my *vis a fronte* must, unit edly, have equalled fully 150 pounds. For want of a better place, let me here say that the supra-pubic pressure possesses another helpful property besides that of propulsion. If directed downward and backward, as it should be, it flattens the head bilaterally against the sharp edge of the promontory, and aids in the process of moulding.

If now, to an extractive force fully equal to that of the for ceps be added the great mechanical advantage gained by getting the small end of the wedge, viz., the cranial base, to enter the inlet; and also that gained by the engagement in the conjugate of the small and very compressible bitemporal diameter; and if to these very substantial advantages be superadded the telling mechanism of delivery in version, by which only one small portion of the skull is compressed, and that where most needed, viz., in the offending diameter itself of the child's head, while by the forceps the compression is diffused over large sur faces, on unimplicated diameters, and consequently in more or less direct antagonism to the line of compression made by the symphysis and the promontory—it follows that the weight of argument in favor of the manual over the instrumental operation is overwhelming

Notwithstanding the foregoing facts show the wonderful tensile strength of the fœtal neck, and the great amount of force that can safely be used to extricate the after-coming head from the grasp of the brim, it is of importance to exert the power to the best mechanical advantage, and to grade it to the resistance. This brings me to the mode of making traction. But since the question of version in narrow pelves hinges on that of the management of head-last labors, I shall take the liberty of quoting somewhat freely from my paper on that subject.

In the first place, the woman's hips should be brought slightly over the edge of the bed, and each leg supported by an assistant.

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My reasons for this position in preference to the lateral one are: That supra-pubic pressure is then better made by the hands of a third assistant, or by the free hands of the two assistants. That very few physicians, while bending forward in front of the woman thus placed, can exert a steady force of one hundred pounds upon the neck of the child; and, finally, that the upper hand of the physician can then force the neck into the hollow of the sacrum, and thus make the line of traction somewhat behind the axis of the superior strait.

In a brim narrowed in its conjugate, the sacral side of the after-coming head is bent in and fixed by the jutting promontory. Hence, as Barnes has shown, the extrication of the head as a whole can take place only when its pubic side revolves around the promontory and descends over the smooth undersurface of the symphysis of the pubes; in other words, the head must be warped around the promontory. Bearing this fact in mind, it is important after version, that the sacral side of the head should be caught at a point as near as possible to its vault. To gain this end, the physician, after grasping the nape of the neck with one hand and the ankles with the other, should make his first movement of traction in the axis of the outlet. For then the pubic side of the head will be tilted away from the inlet, while the sacral side will proportionally descend over the promontory and affront the brim. This canting of the head can be very materially aided by the free hands of the assistants, who will make very firm downward and backward pressure upon the vault of the head through the now flaccid abdominal walls. By these manœuvres the sharp promontory is made to indent the sacral side of the head at a point still higher up and nearer to the vault. Hence, the arm of the lever, measured by a line drawn from the base of the skull to this fixed point, will be correspondingly lengthened—a mechanical advantage not to be overlooked. If now, *without for a moment remitting but rather increasing the traction*, its direction be reversed, and the child's body be swept backward upon the coccyx—the neck being also forced downward and backward into the hollow of the sacrum with all one's power—the sacral side of the head becomes bent in, and the pubic side is made to revolve around the promontory, and descend with the least expenditure of power. Apart from the leverage thus gained, and the shorter arc thus

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described around the promontory as the centre of motion, I am not sure but this manœuvre will, in very narrow pelves, so cant the cranial base as to get it below the sharp edge of the promontory. This much I can affirm: that by this method less power is needed to deliver average heads in narrow pelves than large heads in average pelves. For, in the former, the resistance is limited to a single osseous point; in the latter, diffused over the whole bony brim.

Whenever this mode of traction fails at once to release the head from the grip of the brim, or the difficulty lies rather in the size of the head than in the narrowness of the pelvis, I have on several occasions, especially in original head-last labors, found a pump-handle movement very efficient. Made with steady and unremitting traction, and aided by supra-pubic propulsion, it will cause each side of the wedge-shaped head to descend alternately. The range of oscillation should extend from the axis of the outlet anteriorly, to very firm pressure on the coccyx posteriorly. With a very sharply-jutting promontory this up-and-down movement does not usually succeed, unless the parietal bone has been depressed as a whole, or broken in, and not simply indented. Otherwise the sacral side of the head is held fast, and the pubic side will then librate around the indented, and therefore fixed point, merely rising and falling without any onward progress whatever.

As soon as the unflexed head has passed the brim, which it usually does with a well-marked jerk, it is brought into relation with new pelvic diameters. Flexion and rotation now spontaneously take place, and the line of traction must be changed to that of the outlet. And when, finally, the head is about to clear the bony canal, the body of the child should be raised up in front of the pubes, and traction made in a line at right angles to the mother's body.

That the spoon-shaped depressions or even fractures of the sacral side of the child's head are not very dangerous lesions, not only do my own cases show, but also those reported by Simpson, Schroeder, Danyau, Depaul, Blot,[1] and by many others, the enumeration of whose names would make too long a bead-roll. They are by no means so fatal to life as a lack of promptness on the part of the physician in making efforts at delivery.

[1] Archives Générales de Médecine, July, 1863, p. 25.

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I have, however, taken for granted that he does not err in this respect. So long as the cord beats, or other signs of life are present, there must be no remission whatever in the extractive efforts of the physician. But if, after the head has become well jammed into the brim, the child is found to be dead and its delivery proves to be a difficult one, due moulding time may be given.

The limit of conjugate narrowing through which the aftercoming head of a mature infant may be dragged cannot be easily determined. Here theory must give place to bedside experience. Numerous are the cases on record in which turning succeeded after the forceps had failed. Simpson[1] turned and delivered dead children through pelves measuring 2.5 inches and upward in their conjugate diameters. Others have been equally lucky. Schroeder[2] extracted living children through conjugates of 2.8 inches; I myself through one of 2.82 inches; and Blot[3] through one of three inches, in which Dubois had previously been driven to the cephalotribe. On one of the museum shelves of the Bellevue Hospital Medical College I saw the fractured skull of an infant which Professor Isaac E. Taylor had dragged through a pelvis measuring 2.75 inches. To the above I would add Madame Lachapelle's[4] cases in conjugates respectively measuring 2.75, 2.5, 2.25, and 2.2 inches, were it not that I distrust the accuracy of that celebrated midwife's statements.

Now, so far as I can judge from the history of these cases, none of the operators, excepting myself, invoked the very substantial help of a propelling force; hence the inference is logical that the conjunction of traction and propulsion offers better results. Thus, in Case VII. these two forces delivered a head through a strait narrowed to 2.5 inches, and bounded at each end by bony projections. From theoretical and clinical deductions two broad rules for guidance in turning may, I think, be laid down: first, that the brim must be narrowed mainly in its conjugate; and, second, that a brim which can admit the unyielding base of the skull is traversable by the crown. With

[1] Obstetrical Works, vol. i., p. 450.
[2] Manual of Midwifery, Am. ed., 1873, p. 262.
[3] Archives Générales de Médecine, July, 1863, p. 19.
[4] Pratique des Accouchements, vol. iii., 9th Memoir.

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regard to the first rule, it is self-evident that there must be room enough in the bisiliac diameter of the pelvis for the occipito-frontal diameter of the unflexed head to pass. This diameter is a very hard one to measure; but transverse narrowing may be inferred whenever a strongly flexed head lies obliquely, and yet does not engage or descend. In conjugate narrowing, on the other hand, the head lies transversely, and so extended that the anterior fontanelle sinks lower than the posterior one. The second rule is based on the presumption that the lateral portions of the skull lying above the hard base, being flexible, are reducible to the width of the base. The portion of the base which, according to my observation, first enters the conjugate, and impinges on the promontory, is the hollow lying directly in front of the external meatus of the ear. The diameter of the base at this point ranges in length from 2.50 to three inches; and to 2.75, their mean, as a minimum, would I, therefore, restrict the operation of version when the infant is mature; provided always that the head is presumptively an average-sized one. Should the head prove to be a small one, a living child may possibly be delivered. If the head be so large that its base cannot enter the brim, then the worst that could happen would be a final resort to craniotomy or to cephalotripsy—measures which would have been initial had the cephalic presentation been retained.

Whether, in these transverse cranial positions, turning has advantages over the application of the forceps to the sides of the child's head, is a question which I have thus far purposely avoided, but on which I now invite discussion. The cases of mature children delivered by the forceps through conjugate diameters not over three inches in length may be counted on the fingers. In straits narrower than this no one has, to my knowledge, ever succeeded. Its effective range, as ordinarily applied, is from a diameter of 3.50 inches to that of a standard pelvis. A diameter of even 3.50 may compel a resort to the perforator. But, while numerous facts seem to prove that in very narrow pelves the forceps cannot compete with version, I am sure that its range of usefulness can be very materially widened by that cephalic application of the blades, viz., to the sides of the head, which is practised by the best obstetricians of this city. Such an application in these transverse cranial positions, by compel-

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ling the greater equitation of the parietal bones, and by shortening the offending lateral diameter of the head, lessens the risk to the mother's tissues, and the power needed for extraction. Also, by compressing the least vulnerable portions of the head, it is less likely to cause fatal brain lesions. Yet, even then, the pressure on the mother's tissues is a prolonged one. At best it usually fails to deliver living children through pelves narrowed down to 3.25 inches; while at three inches labor must very generally be ended by craniotomy. Again, in so far as the question of version is concerned, the majority of the arguments urged against the pelvic application of the forceps, holds good against its cephalic application.

Let me not be misunderstood. By no means do I cast off such an old and tried friend as the forceps. It has served me too many good turns to be so illy treated. Cases there are in which turning cannot or should not be performed. Again, the urgency after that operation for immediate delivery is a strong argument against its indiscriminate use. To put these thoughts into practical shape, I offer the following general propositions:—

1. Turning should generally be preferred to the lashing of the forceps handles.

2. In pelves uniformly contracted the forceps is the better means of delivery.

3. In pelves narrowed in the conjugate diameter, turning should be resorted to whenever a half-hour's faithful trial with the forceps fails to make the head engage.

4. In pelves whose conjugates range from 2.75 to 3.25 inches, turning should be the initial step.

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PREGNANCY AND LABOR IN EPILEPTIC WOMEN.

BY JOHN S. PARRY, M.D.,

Accoucheur to the Philadelphia Hospital; Vice-President of the Obstetrical Society, Philadelphia, etc., etc.

(Read before the Obstetrical Society of Philadelphia, June, 1874.)

ACCOUCHEURS occasionally meet with epileptics who have become pregnant, and who pass through the period of pregnancy and labor without any alarming symptoms, the fits occurring as usual before labor sets in, but being discontinued after the pains come on. The writer can call to mind several confirmed epileptics who have been under his care, who required no additional attention during the time when they were *enceinte*, and in whom the process of parturition was as favorable as in perfectly healthy women. So far as he can now remember without having notes of those cases, no paroxysms of the disease occurred during the conventional ten days succeeding delivery, when the women are under professional supervision.

That this happy termination of labor without epileptic seizures is not without exceptions the succeeding history shows conclusively.

The patient is an unmarried girl, æt. 23, who came to the Philadelphia Hospital to be confined. She is a short, stout woman, and when admitted she had the appearance of a confirmed epileptic. The disease had existed for years, and had resisted all efforts at treatment. The fits are preceded by a distinct aura, commencing in the leg. They occur very frequently, and have all the characteristics of the convulsions of this disease. In April last, shortly after admission to the hospital, she had no less than twenty-five convulsions in five hours. After that time the frequency of the seizures diminished under the use of bromide of calcium prescribed by my colleague, Dr. Girvin, and for some time before labor commenced her condition was very fair, but as the time for her travail approached there was a more decided tendency to convulsions.

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Labor began about 5 P.M., on June 30th, and almost immediately afterwards epileptic convulsions set in. Dr. John M. Keating, the resident accoucheur, at once sent me a hurried message, stating that it was probable that immediate delivery was indicated. When I reached her I found that she had reached full term. Labor pains of a severe character were occurring at regular intervals. Her abdomen was very large. This had attracted attention before the commencement of her labor. The distention was increased by tympany. Vaginal examination showed that the os was dilating. At this time, two hours and a half after the commencement of labor, it would more than admit two fingers, and was not at all dilatable. The child's head could be felt presenting, and could be moved with great ease in the cavity of the uterus. It was evident that the womb contained a large quantity of liquor amnii. The pelvic passages were perfectly normal.

Her pulse was 96 per minute, full and round. Epileptic fits occurred at short intervals. Between five and half-past seven o'clock she had sixteen of these, remaining perfectly unconscious for some time afterward. Dr. Keating had noticed from the time that labor commenced the convulsions were preceded by violent slapping of the belly with her hands, while when the pains would come on she would clap her hands strongly and rapidly. We were thus enabled to tell whether a fit or a pain was approaching when sitting anywhere in the room. The convulsions were very violent, lasted several minutes and presented all the ordinary phenomena of these epileptic seizures. They were remarkable in one particular, being characterized by extreme opisthotonos. The heels and occiput were almost in contact, while the chest and protuberant abdomen made a very strong curve. During the paroxysm the legs were so strongly flexed that the heels were brought in contact with the posterior surface of the thighs and retained there until the force of the paroxysm was entirely spent. During the intervals between the convulsions she laid with her legs fully extended, but during the fits only the occiput and knees touched the bed.

Shortly after 7.30 P.M. she was etherized. The ether arrested the convulsions, but it likewise completely suspended the strong labor pains which had been occurring at intervals of ten minutes. As the convulsions were so severe, and as it seemed

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probable that they would recur when she rallied from the influence of the ether, I determined to hurry dilatation of the os and rupture the bag of waters with the hope of mitigating or arresting the convulsions. At 8.15 Dr. Keating introduced the middle-sized Barnes' dilator with great ease. It was slowly distended, and the largest size soon substituted for it. At 9.15 P.M. this dilator, which was not as large as it should have been, was removed and the dilatation of the os was almost complete. The head was now found in the left occipito-anterior position. The child was very movable in the cavity of the uterus. The membranes were very strong and bulged freely from the os uteri. About 10.35 P.M. they were ruptured and a large quantity of liquor amnii drained off.

Simpson's forceps were now applied with ease, but upon making traction the os was almost, but not quite sufficiently dilated to allow the head to pass. They were therefore removed, and as the uterus was considerably diminished by the discharge of the waters, it was decided to suspend the use of the ether, and if possible to allow nature to finish the nearly complete dilatation.

When the effects of the anæsthetic disappeared she was semi-conscious, and complained of exhaustion and pain in her head. The uterine contraction recurred at regular intervals, and in a little more than an hour dilatation was complete. Dr. Keating again applied the forceps, and at midnight delivered her of a healthy living boy, who weighed seven pounds seven ounces. After delivery she remained absolutely unconscious for some time. After consciousness was restored she was in fair condition, and had no more convulsions. Her urine was not albuminous at any time.

There are several points of interest in connection with this case. Standing by the poor woman's bed-side during the violent convulsions which she had in April last, or during those which she had while in labor, one could hardly believe that she could give birth to a living child. Bent almost double, with only the bases of the arch touching the bed, it seemed almost impossible that the child could escape injury. Especially when we remember that death of the fœtus—though by no means universal, is the common result in puerperal convulsions. In this particular that disease appears to differ from epilepsy.

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The second point of interest is the management of the case. She would have borne bleeding, but there was no obvious indication for it. Her arm is already sufficiently scarred by the lancet, though according to her own statements venesection has always injured her.

The administration of the anæsthetic is probably the first therapeutic agent that would suggest itself to any accoucheur, and it certainly acted most happily so far as the convulsions were concerned, but it completely arrested the pains. Then came up the important question, shall we trust to the anæsthetic to ward off the convulsions, and wait until nature has had an opportunity to complete dilatation? There was evidently a necessity to empty the uterus as quickly as possible, if irritation produced by the extreme distention, had anything to do with the production of the epileptic paroxysms. Therefore I decided to complete dilatation as rapidly as possible, and to deliver with the forceps if necessary, though I freely acknowledge that had the case occurred in private practice I would not have been so hasty. It is to elicit discussion upon the method of managing these cases that I have dwelt thus long upon this subject.

Another interesting case of epilepsy in a pregnant woman came under my care a few years since. The lady, who was then about twenty-four years old, engaged me to attend her in an approaching confinement. She was at that time a handsome woman, with good blood-making powers, dark hair, fair complexion, and thin, delicate skin. She had every appearance of a woman in good health. She had no venal disease. There was no hereditary tendency to nervous affections, and no member of the family had ever had epilepsy. My patient herself remained perfectly free from the disease until she was between three and four months gone in her first pregnancy, when an epileptic convulsion occurred. The fits were repeated at intervals of a few days, or one or two weeks, until she was about seven months gone, when she miscarried with a dead and decomposing fœtus. She had no convulsions during labor. Her recovery was natural, and after delivery there was no tendency to epilepsy.

In her second and last she came under my care too late for me to hope to do anything to prevent the epilepsy. The fits

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had set in when she was about three months gone. They recurred several times a week; came on without warning, so that she would fall unconscious wherever she might be at the time of the paroxysm. The convulsive movements were not remarkably severe, but the general characters of an epileptic seizure were fairly developed. The symptoms continued until the end of the eighth month of gestation, when I delivered her of a dead decomposing fœtus, of seven months' development. The labor differed in no respect from ordinary labors, in which dead children are born. She had no convulsions during labor.

Since this confinement, about four years ago, this lady has never been pregnant. In summer of 1872 she began to show signs of commencing phthisis. During the succeeding fall she had a number of severe pulmonary hemorrhages, which prostrated her very much, but she rallied again after several weeks. During the next year, besides many other cares, she was much occupied in nursing her mother and sister, both of whom died in 1873. Notwithstanding these drawbacks, her pulmonary disease is at least quiescent, if she is not recovering from it. During this time she has not had an epileptic fit, nor has she manifested a tendency to any other nervous disease.

The influence of gestation upon epilepsy has been noticed by numerous writers. These observations, however, refer to women who were epileptic before becoming pregnant, and in whom the severity of the disease was either increased or diminished (generally the latter) during the existence of pregnancy. Cases of epilepsy, produced by pregnancy, are comparatively rare. Andrèe gives the history of a woman who became epileptic in her two pregnancies. In both instances—like the woman whose history I have related to-night—she aborted.

Tissot met with two cases of this form of disease. In one the fits occurred almost every week until the motion of the child was felt, while the other woman had a fit every month during the first two pregnancies. Echeverria states a single case in which the patient was epileptic during seven pregnancies, though she had no paroxysms during labor. Nor was there any difficulty in the labor of Griffin's patient, who was pregnant for the first time, and who had fits every six weeks during the early part of her gestation, though their frequency was greatly increased towards the end of her time.

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La Motte has recorded a curious case of epilepsy during pregnancy, in which the sex of the child in utero appeared to have an influence in producing the disease. She was pregnant eight times, and only had fits when carrying a male child. Van Sweeten mentions a similar case.

In none of these cases, so far as we are able to determine by access to their records, did the epilepsy become permanent; but Malgaigne has published the account of a patient who had epileptic fits for the first time during pregnancy, and who had them ever afterwards.

In regard to the relations existing between pregnancy, parturition, and epilepsy, experience and the study of the literature of the subject appear to warrant us in making the following statements:

1. Epileptics rarely have convulsions during labor. They are not more liable to puerperal convulsions than healthy women. Labor in them is, as a rule, not more unfavorable than in healthy women.

2. In the exceptional cases, in which violent epileptic convulsions occur during labor, it is not decided whether it is best to hasten delivery or to trust to nature.

3. Pregnancy may be the immediate cause of epilepsy. In these cases fits rarely occur during labor, and the disease is immediately arrested by parturition, but it will almost always reappear whenever the woman becomes pregnant.

4. Either form of epilepsy may result in the death of the fœtus, but convulsions of this kind are not as likely to destroy the child as are those which may be correctly designated puerperal.

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Reported by J. V. INGHAM, M.D., *Secretary.*

STATED MEETING, DEC. 3, 1874. DR. J. L. LUDLOW, VICE-PRESIDENT, IN THE CHAIR.

PELVIC CELLULITIS FROM ABORTION.

DR. R. G. CURTIN read the history and presented a specimen of a case of pelvic cellulitis caused by an attempt to produce abortion. On post-mortem examination there was found a small puncture on one side of the cervical canal, and an abscess in front of the uterus and back of the vesico-uterine fold.

DR. LUDLOW referred to the great prevalence of the habit of producing abortions by the use of such instruments as catheters, probes, quills, knitting-needles, etc., and thought it was the duty of every physician to warn his patients of the danger arising from the operation. He attributed it in some cases to the influence of popular lectures to women.

EPITHELIOMA OF THE CERVIX UTERI.

DR. J. L. LUDLOW presented a specimen of epithelioma of the cervix uteri. The patient from whom the specimen was removed had suffered from intense pain and hemorrhages, and had been treated with various applications, such as nitric and carbolic acids, etc., without relief. He removed the proliferating mass in fragments with considerable loss of blood, and made an application of a mixture of equal parts of carbolic acid and a solution of bromine ʒ j. to vii. of water. He then dressed the parts with the extract of the root of the phytolacca decandra.

The patient improved under this treatment, and in three weeks there was no trace of the disease left.

Dr. Ludlow remarked that he had been led to use bromine in this manner by the remarks of Dr. Wynn Williams before the London Obstetrical Society. He also instanced another case similar to the former, in which the patient improved so much under two or three applications of the carbolate of bromine, that she is now pregnant. He thought the mixture well worth trial if only to remove the extreme fetor.

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Dr. Parry said that the specimen was from a case of villous cancer of the os uteri. He had had several cases of the kind, and was thoroughly impressed with the advantages of the method of treatment of Prof. Simon, of Heidelberg, viz. scraping away the diseased mass. If the tissue of the uterus is not involved the simple removal of the growth will restore the patient temporarily to health. He had already reported one case to the Society which he treated in this manner with the effect of affording complete relief for a time.

Dr. Ludlow thought that in these cases of cancer of the uterus he had noticed a stale, albuminous odor which he thought characteristic.

Dr. Cleemann referred to a case which he had treated by scraping, with the effect of stopping the hemorrhages. He always used a strong solution of tannin in glycerine for arresting the hemorrhage from the operation.

RENAL DISEASE WITH EARLY FŒTAL DEATH.

Dr. A. H. Smith gave the history of a case of renal disease, with fœtal death, occurring at an early period of pregnancy.

In April, 1871, he was called to a patient who presented symptoms of labor at about six and a half months of pregnancy. She was twenty-three years of age, had been married two years, and had previously had two abortions, one at two and a half months, and the other at four months. She was not able to assign any cause for these. He found her in quite active labor, the pains occurring at short intervals. There were nausea, violent pain in the head, slight tendency to convulsions, and a full and frequent pulse. He attempted at first to arrest the labor by opium suppositories, with the effect of lulling the pains, but they recurred with increased activity.

In thirteen hours she was delivered of a child of about five months' development. The placenta was atrophied, and presented in several places large organized clots. The patient recovered slowly, requiring stimulation to bring her up again to a normal condition.

The urine at the time of delivery was albuminous, but there were no tube-casts or oil-globules. The albumen gradually diminished, and the urine returned to a healthy condition after delivery.

In 1873 he saw her again, suffering from menstrual irregularity. A week later nausea, etc., set in, and he informed her that she was again pregnant. In the third month, examination of the urine revealed a small amount of albumen, but no tube-casts. The albumen increased in amount until the sixth month, when the urine contained it so largely as to become of a semi-solid consistence, on the application of the usual tests.

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At four and a half months the patient quickened; at the fifth month she was seized with cramps of a peculiar character. Upon placing the hand upon the abdomen at certain times, the uterus was found to harden, and was thrown violently forward with great tension of its tissues. These cramps occurred perhaps three or four times a day. He had noticed this peculiarity in three cases of placental disease.

Symptoms of uræmic poisoning had existed during the whole of the pregnancy.

There was no œdema present, but nausea at times caused the rejection of all her food. He treated her actively, to prevent the development of œdema. On December 10th, 1873, the motion of the child ceased, and symptoms of constitutional poisoning from the presence of a dead fœtus set in. She went on to full term, and on the 22d of January, 1874, fell into labor, and was delivered of a child of about six months' development. The placenta was atrophied, softened, and contained organized coagula. The fœtus was soft and the bones cartilaginous in character.

He examined the urine frequently after the death of the child, and found the albumen gradually diminishing. The patient menstruated one month and then became pregnant again. During this pregnancy she was quite well, with no symptoms of uræmic poisoning. She was of good color, and in full muscular vigor. The pregnancy advanced favorably and without bad symptoms, until October 15th, 1874, when the motion of the child ceased. Fearing the bad symptoms of the previous pregnancy, he induced premature labor. He used a bougie for that purpose without the slightest effect. Hot and cold douches were also used, and large doses of ergot. The latter brought on labor, and the child was born in the sixth month of gestation, but only of about four months' development.

The patient is now well (December 3d, 1874), and has a good color, good digestion and appetite.

The urine now shows again diminution of the albumen. In this last pregnancy there were also the same cramps as before, and the placenta had the same characteristics as in the other pregnancies.

Dr. Smith remarked further that there were some peculiar features in this case. The condition of pregnancy was the exciting cause of the condition of the kidneys. This did not occur as in ordinary cases of albuminuria, but was manifested soon after pregnancy.

The albumen in the urine steadily diminished between each delivery, and in the next pregnancy œdema was absent during the whole history of the case. There was no puffiness of the

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eyelids or œdema of the feet or face. The character of the cramps was also peculiar.

Dr. Ellwood Wilson remarked that the case seemed to be one of syphilitic taint. The difficulty could be remedied by the continued use of iodide of potassium. He did not think the presence of albumen in the case necessarily showed the existence of congested kidneys; he had seen in similar cases the urine thick with albumen.

Dr. Smith replied, that he had frequently seen cases in which repeated abortions were due to syphilitic disease, and a few years ago he should have considered this case as one of syphilis. He had, however, every reason to believe that there was no taint whatever in the case. The father he had known for years as a strong vigorous man. He had seen cases from time to time, before he had examined into the condition of the placenta, in which he had supposed the condition to result from syphilis. In this case he had found only an atrophied condition of the placenta, without any evidence of degeneration. He had seen cases in which young men who have had syphilis have married and had healthy children. Because renal disease often results in poisoning of the system, there was no reason to regard this case as one of syphilis.

Dr. John S. Parry remarked, that he had had the urine of many cases of syphilitic pregnancy examined, and his experience would lead him to conclude that these cases were not more subject to albuminuria than others. He had repeatedly seen women impregnated with syphilis, carry their children to term in a well-developed condition, but the children showed evidences a few weeks after birth of constitutional disease. He agreed with Dr. Smith that we are too prone to regard syphilis as a cause of abortions. He agreed with him also, as to the influence of syphilitic fathers on their children. He had known healthy children begotten by a syphilitic father. According to some authorities, the mother does not become infected through the child, but is inoculated by contact with the husband's secretions, etc.

Dr. Curtin remarked, that the German writers recognize syphilitic albuminuria, and its peculiarity is its amenability to treatment.

Dr. Parry said he hoped that Dr. Curtin did not think that he had not recognized the condition of syphilitic albuminuria referred to. He believed in syphilitic disease of every organ of the body.

Dr. E. Wilson could not believe in the possibility of a healthy child being born of a diseased father. He instanced several cases in support of his views, in which young men who had

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contracted chancres, followed by little or no constitutional symptoms, married after the lapse of years and had syphilitic children.

He believed also that a succession of pregnancies will eliminate syphilis from the father.

VIABITITY OF FÆTUS AT SIX MONTHS.

Dr. Packard reported the following case:

Mrs. H.——, æt. about 20, has one child less than a year old. Was unwell in June, after missing several periods; again in July, and again in August. In September she had what her mother said amounted to flooding for nearly or quite three weeks, and in October she again had a slight bleeding, which she thought was her regular menstrual flow.

On the 25th of November, having suffered from abdominal pains through the day, she had, as she supposed, a call to stool, and sitting on the commode, was suddenly delivered of a child, which fell into the vessel, and was taken out by the grandmother, who was present. The child lived, kicking vigorously, and crying, but not opening its eyes, for fifteen minutes.

Mrs. H. had no idea that she was pregnant; had had no quickening, and had felt no motion.

Similar instances were reported by Drs. E. Wilson and Cleemann.

ABORTED OVUM—ABSENCE OF FŒTUS.

Dr. De Forest Willard presented an aborted ovum which presented some interesting features. The patient was a young, healthy woman, nursing a child of 16 months of age, and did not know she was pregnant. She had had severe pains for two months, until, after fulfilling a dentist's engagement, the pains increased, and she was delivered of an ovum apparently of two months of age. On opening the chorion he found that the amniotic sac was dropsical. He could not find any evidence of a fœtus. Under the microscope the villi of the chorion were beautifully shown, but there was not the slightest sign of a fœtus.

Dr. A. H. Smith asked whether there was any evidence of vesicular degeneration of the chorion.

Dr. Willard replied that the chorion was perfectly normal.

RARE FORM OF DEATH FROM CANCER OF THE UTERUS.

Dr. John S. Parry exhibited a specimen which illustrates rather a rare mode of death from uterine cancer. The woman from whom the specimen was taken had been treated in various hospitals for hemorrhage from the vagina, but there was nothing peculiar in her case until three weeks ago. Careful exam-

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ination had revealed that the cervix and half the body of the uterus were destroyed by cancer, and that the vagina communicated with the bladder by a small orifice.

Three weeks ago she complained that her urine was arrested There were symptoms of uræmia, such as headache, vertigo, profuse vomiting, but no anasarca. In a few days the secretion of urine reappeared; in a little while it was suppressed, then again appeared, and a few days ago it was arrested for the last time. She died with symptoms of uræmia.

On post-mortem examination there was found an opening between the bladder and the vagina. The cervix and part of the body of the uterus, and the adjoining part of the vagina, were destroyed.

There was a thickened mass to the right of the bladder and uterus. The right kidney and ureter were greatly distended with urine. The obstruction existed at the entrance of the ureter into the bladder, and was caused by inflammatory thickening. The left kidney was natural. Dr. Parry had seen three cases of uræmia from cancer of the uterus.

STATED MEETING, JAN. 7, 1875. DR. J. L. LUDLOW, VICE-PRESIDENT, IN THE CHAIR.

The following officers were elected for 1875:

President—DR. A. H. SMITH.

Vice-Presidents—DR. JOHN S. PARRY, DR. EDWARD WALLACE.

Secretary—DR. J. V. INGHAM.

Treasurer—DR. D. MURRAY CHESTON.

Curator—DR. WILLIAM F. JENKS.

Publication Committee—DR. WM. GOODELL, DR. J. H. PACKARD, DR. W. F. JENKS, DR. R. G. CURTIN.

Council—DR. LEWIS D. HARLOW, DR. R. P. HARRIS, DR. ELWOOD WILSON, DR. J. F. WILSON.

STATED MEETING, THURSDAY, JAN. 7, 1875. DR. A. H. SMITH, PRESIDENT, IN THE CHAIR.

DR. GOODELL read a letter from Dr. A. Douglass Hall, presenting to the Museum of the Society a lancet case containing four lancets which were used by Prof. James in his daily practice.

CONVENIENT METHOD OF EXAMINING OF THE BRAIN IN INFANTS.

DR. R. G. CURTIN described on a cadaver a convenient method of making a post-mortem examination of the brain, only applicable, however, to cases of infants. The scalp is

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divided in the usual manner, and instead of taking off the calvarium he divides the sagittal, fronto-parietal and lambdoidal sutures, and in this manner is able to separate the parietal and occipital bones sufficiently to allow the brain to be removed. When the brain is replaced the bones spring back to their usual position. The benefit of this method is its convenience, and the absence of disfigurement of the head by the mobility of the separated calvarium.

ABORTED OVUM.

Dr. Elliot Richardson exhibited an aborted ovum of about eight weeks' gestation, as nearly as could be ascertained. On examination of the walls of the sac a thick portion composed of clot apparently between the membranes was found. There was a small sac of delicate membrane attached to the larger one. The large cyst contained a muddy fluid, but there was no trace of a fœtus.

The specimen was carefully examined with the microscope, and the presence of the villi of the chorion proved it to be a product of conception.

Dr. E. Richardson also presented a specimen of a uterine myoma.

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STATED MEETING, FEB. 4, 1875.

DR. WM. GOODELL exhibited a large fatty tumor of the labium, weighing one and a half pounds, recently removed by himself.

The President, DR. ALBERT H. SMITH, delivered the annual address to the Society.

ANENCEPHALOUS FŒTUS.

DR. PARISH presented for Dr. J. W. Barr an anencephalous fœtus with the following history:

The father, æt. 45, was in the last stages of consumption.

The mother, with six previous children and all healthy, is also feeble, but not distinctly diseased.

When labor came on she firmly believed that she had reached the end of the tenth month of her pregnancy. While carrying the child she, from over-work and watching, became quite feeble. Her abdomen was unusually large.

As the membranes gave way during labor, an unusual quantity of liquor amnii escaped, followed for a short time by disappearance of labor pains.

The defective portion of the child's head was presenting, the Doctor recognizing a pulpy mass separating the two ears. There was no delay with the passage of the head after engaging, and with a little assistance the shoulders were easily delivered. The remnant of the head was almost black from congestion. The heart beat for a number of pulsations after birth, but no attempt at respiration was observed.

DR. GOODELL asked whether there was any movement by the child when the head was touched. This is said to be a diagnostic point of this malformation, pressure upon the medulla oblongata producing reflex action. He referred to a suggestion made on a previous occasion by Dr. Harris, that the excessive vesical disturbance, which is sometimes found in these cases, is due to the softened condition of the child's head, allowing it

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to descend into the pelvis. There is also generally a large amount of liquor amnii in these cases. A German writer also maintains that the anencephalous condition of the fœtus is due to a previous condition of hydrocephalus.

Dr. Harris suggested as another point of diagnosis that the ears of the child before birth seem to be hard and cartilaginous, and this, too, not as the effect of pressure, for it occurs when the child is high up.

Dr. Ludlow had seen three cases, all similar to the one shown. The apparent prominence of the eyeballs was due to want of development of the ridges of the frontal bone.

The President asked whether, at the time of the fright referred to in the history of the case, there was any hemorrhage. In the only case he had seen, the patient had had at six and a half months a hemorrhage from placenta prævia. She fell into labor at term, the presenting placenta was easily detached, and a child of six and a half months' development was delivered. There was, however, another child of about eight and a half months' development delivered promptly and well. In this case the nutrition of the first child was affected by the hemorrhage.

Dr. Parish replied that there was no history of any hemorrhage.

Dr. Kelly stated that in two cases which he had seen there was in one a history of intemperance, in the other one of syphilis.

On motion, the fœtus was referred to a committee for careful examination to determine the exact condition.

This committee subsequently reported as follows:

"Your committee report that they found the anencephalous fœtus, referred to them for examination, to be remarkably well developed in all its parts with such exceptions as are mentioned below.

"The general shape of the head presented an appearance suggestive of that of the frog. The soft tissues of the face were flabby; the eyeballs protruded forward; the auricles of the ears were large, pendulous, and pressed forward. The bony structures and the soft parts of the cranial vault were absent. In their stead was a flattened area of about three inches in diameter, presenting a 'raw' appearance, and covered with a thin, delicate membrane. This membrane was continuous with the integument around, but altogether different from it in appearance, and not covered with any hairy growth, as was the skin surrounding this area. On the removal of this membrane was found a flattened layer of tissue resembling connective tissue, containing fibrinous remains of clotted blood. No brain tissue

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was recognized above the medulla, which presented as an eminence in the posterior half of the abnormal area.

"In our examination of the bones of the cranium, we found the basilar and condyloid portions of the occipital bone present, while the occipital portion of that bone was entirely absent, so that the foramen magnum was encircled with bone excepting at its posterior portion, where fibrous structure completed the rim.

"No portions of the parietal bones were discoverable.

"The horizontal portion of the frontal bone was present and apparently normal, the vertical portion was deficient above the line where later in life is seen the superciliary ridge.

"The squamous portions of the temporal bones were absent.

"The examination of the sphenoid bone was less satisfactory, but it seemed normal, save that the greater wings were undeveloped excepting in a narrow line contiguous to the body of that bone.

"The ethmoid seemed normal.

"A more thorough examination was not made for fear of rendering the specimen unfit for preservation.

"W. H. PARISH,
"WM. GOODELL, } *Committee.*"
"JOS. V. KELLY.

FIBROID POLYPUS OF THE UTERUS.

DR. ELLWOOD WILSON presented a large tumor which he had removed from the uterus of a single lady. Three years ago she was troubled with excessive hemorrhage and pain at her menstrual periods. For this he made an examination, and found the uterus not unusually large and the vagina small, so as to require a small speculum. By the use of injections the hemorrhage ceased. She passed from under his care for eighteen months, being out of the city. On January 7th, he saw her again, and making an examination, found the vagina completely occupied with a tumor extending up into the uterus. On January 10th, he removed the tumor, which was attached to the posterior surface of the cavity of the uterus, a little to the right of the median line.

The tumor was 2½ inches long, its area of attachment 3¼ by 2½ inches, and its weight 23 ounces.

He first drew the mass down with great tension, and then removed it with a curved knife which he has devised for this purpose. He introduced the knife, cutting first upon one side, then upon the other, giving the mass a rocking motion as he

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cut, and then making torsion. The tumor was so large that the perineum was ruptured in its extraction.

This specimen was referred to a committee for microscopic examination, who subsequently reported as follows:

"The committee appointed to examine the 'Polypus of the Uterus' exhibited by Dr. Ellwood Wilson would respectfully report that this specimen is a *cystic myoma*, of the class known also as *myomatous or fibroid polypi*. The latter term is strictly appropriate if the word *polypus* is used to indicate tumors which grow within the uterus and present a more or less pendulous form.

"The minute structure consists of the usual unstriped muscular fibres and vascular tissue, which are rendered easy of dissection after maceration in a dilute (20 %) solution of nitric or other acid. The spaces or cavities presented by the growth may be looked upon as simple separations or distended fissures between the muscular fibre-cells, being entirely without epithelial lining, notwithstanding their smoothness."

STATED MEETING, MARCH 4, 1875. DR. A. H. SMITH, PRESIDENT, IN THE CHAIR.

ABNORMAL FORMATION OF THE PLACENTAL TISSUES.

DR. CLEEMANN gave a description of a case of placenta succenturiata. After the delivery of a primiparous patient, he noticed that there was difficulty with the placenta, the membranes not slipping out with the usual manipulation. First there was a resistance, which was overcome by degrees, and there appeared a placental mass of the size of the palm of the hand, which was distinct, not bearing any sign of having been torn from the placenta proper. He thought it was a case of abnormal development of some of the villi of the chorion. This case shows the insufficiency of the examination of the placenta alone to show us whether the uterus is empty or not. It may also account for some cases of post-partum hemorrhage.

DR. GOODELL said he had never seen a case of the kind, but in this connection would like to know the views of the Society in reference to the time-honored custom of twisting the membranes in effecting their delivery.

He had given up the plan on account of the liability of a small portion of a delicate membrane being torn off in utero by the twisting.

DR. A. H. SMITH remarked that he had been in the habit of twisting the membranes gently into a thick cord, and then

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making easy traction in the line of the axis of the uterus. In two cases in which the uterus had contracted upon the membranes, which had been torn from the placenta, he succeeded in extracting them by passing a soft napkin into the vagina to enable him to grasp them and then twisting them.

Drs. Cleemann, Yarrow, and Taylor also expressed similar views.

Dr. Goodell asked whether any of the members of the Society who had served in the wards of Blockley Hospital had seen cases of delirium tremens occurring after labor.

Dr. Willard replied that, as the majority of the Blockley patients come into the house several weeks before confinement, there was no opportunity of testing the question.

Dr. Goodell replied that since an injury, a slight wound, or a fracture even, will sometimes develop delirium tremens several days afterward, so in confinement, if a large surface be exposed by the denudation of the placenta, the same result might be expected to happen.

Dr. Keating cited the case of a woman who was brought into Blockley drunk and in labor, but no delirium followed.

Dr. Cleemann suggested that as in labor the membrana decidua uterina covered the area of attachment of the placenta, there was no raw surface exposed. The case was not analogous to that of a wounded surface.

Dr. Goodell replied that it was still a moot point as to whether there was a raw surface left after the extraction of the placenta.

CASE OF TRISMUS NASCENTIUM.

Dr. J. V. Ingham desired to call the attention of the Society to the use of nitrite of amyl in cases of trismus, to control the spasms. He had recently in his own practice witnessed a well-marked instance of its powers in this respect. On the 29th of January, 1875, he had delivered a woman of a fine healthy female child weighing ten pounds. The cord dropped off on the sixth day, leaving a smooth non-ulcerated surface. The child slept well, nursed well, and seemed as well as possible for two days afterwards, when the nurse noticed a slight convergent strabismus, a pursing of the lips, and some spasmodic contractions of the facial muscles. The symptoms, however, disappeared in a few minutes, and the child nursed freely. The following day (the ninth after the birth), another spasm occurred, more marked than the first, and accompanied with some rigidity of the neck. An examination of the umbilicus now for a probable cause revealed an ulcerated surface partially covered with a grayish slough. This was at once touched with

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a stick of nitrate of silver and covered with a poultice. There was no return of the spasm until three days later (twelfth after birth), by which time the navel had almost healed. The spasm, however, was far more severe than either of the preceding ones, the eyes were markedly convergent, the muscles of the face, neck, and finally the arms were rigidly contracted. The doctor, in obedience to positive instructions, was sent for, and arrived just in time to witness the premonitory symptoms of another spasm. Pouring a few drops of nitrite of amyl on a handkerchief, he applied it to the child's face, and after two inhalations the muscles relaxed, the eyes straightened, and the spasm was aborted. During the same night another spasm was threatened (by the commencing strabismus), but was likewise aborted by the prompt administration of the amyl. The child was then carefully watched night and day by competent nurses, instructed to administer the amyl whenever a spasm threatened to occur.

As there were great restlessness and sensitiveness to objective noises and sensations, the hydrate of chloral was ordered in gr. ij. doses every two hours until this nervous irritability was controlled. After the third dose this effect was partially accomplished.

For four days no marked change occurred, a spasm threatening every afternoon about four o'clock, but was always promptly aborted by the amyl. The child nursed fairly well, but was evidently rapidly losing flesh, and on the fifth day (seventeenth after birth), a pyæmic infiltration of the back of the right hand and the left big toe occurred in the night. Iron and quinine were administered, but without avail, for the spasms returning more and more frequently, although in each case controlled by the amyl, the child died on the twenty-first day after its birth.

The doctor then stated that although the nitrite of amyl could not save the life of the child in this case, it had saved the feelings of the family from the constant exhibition of that most horrible sight, especially to the mother, of a child in trismic spasms. On this account alone he thought that it was a very valuable remedy, and deserved a more extended trial in all cases of either trismic or tetanic spasms.

Dr. Goodell said that he had never seen but one case of trismus. At that time he was led to conclude that trismus in the infant was as much a zymotic disease as puerperal fever was in the woman. In the Rotunda in Dublin there was a fabulous number of children lost until Joseph Clark brought about changes in the ward management, with the effect of reducing the number. Various causes have been assigned for the origin of trismus. In the Bermudas it is attributed to

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the cutting of the cord with a rusty pair of scissors. Putridity of the cord and want of cleanliness have been suggested. He believed in the pyæmic origin of some cases. He had already given to the Society his views of the management of the cord. After cutting it he strips it of its gelatinous contents before ligation. He does not have any putrid or offensive navels.

Dr. Ingham replied that in this case there was no suspicion of putridity of the cord, and it dropped off without ulceration.

He alluded to a local epidemic of trismus on a Southern plantation among the slaves, in which the subject had been investigated thoroughly without discovering any cause. Ventilation and cleanliness were good, and the epidemic disappeared suddenly.

Dr. Horace Williams detailed a case in which symptoms similar to that of Dr. Ingham's case set in twelve hours after delivery. These were controlled by chloral hydrate.

He had attributed these symptoms, however, to pressure upon the child's head during delivery.

The woman was a primipara of forty-three years of age. There was rigidity of the perinæum, and the delivery was effected by the forceps. There was nothing wrong about the navel.

Dr. Goodell remarked that as he understood trismus nascentium, it occurs about the time the cord drops off; viz., in about five or six days. He referred to the views of Dr. Sims, giving depression of the occipital bone as a cause.

Dr. Ingham remarked that there was no depression of the occipital bone in this case.

Dr. Cheston said that in the only case he had seen there was marked depression of the occipital bone.

Stated Meeting, April 1, 1875. Dr. A. H. Smith, President, in the Chair.

Dr. Ellwood Wilson exhibited a set of curved knives which he had had made for the removal of intra-uterine polypi. They were blunt-pointed, curved, and had a lateral cutting edge of about one inch in length. The cutting edge is on the right side in one knife, and on the left in the other, to admit of cutting on both sides of the base of a tumor.

Dr. Goodell remarked that a great deal of unnecessary fear existed as to the danger involved in the cutting away of polypi of the uterus. There is cause for fear in those small polypi which dangle from the cervix, which are perhaps more properly enlargements of the intra-cervical glands. In the large polypi, which are more properly fibrous in nature, there is very little

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danger of hemorrhage. He thought that these instruments of Dr. Wilson's were valuable, and he should not hesitate to use them. He was in the habit of using the scissors.

Dr. De Forest Willard presented a specimen of uterine tumor with the following clinical history: The patient suffered for two years with great pain in the back and lumbar regions, with a constant discharge, so offensive in character as to make her presence unendurable to others. There was also that peculiar group of symptoms constituting what has been called the cancerous cachexia. The case had been given to him by the attending physician as one of cancer of the uterus. He was inclined to doubt this from the fact that the large diseased mass involved only the body of the uterus. The cervix and os uteri were entirely free from disease. It is rare to see so large a cancerous mass without the involvement of the cervix. He had not yet examined the specimen microscopically to verify his belief.

Dr. Goodell remarked that so rare was cancer of the body of the uterus, that he doubted the cancerous nature of this mass, but would prefer to await the result of the microscopic examination. It looked more like a sarcoma, that rare disease which deceives the physician into the belief that he is dealing with a polypus, and in which there seems to be a pedicle constricted by the os. These tumors are friable and project into the vagina.

Dr. Willard said that he had been struck with the fact that if the nodules of the mass were prolonged, they might readily be mistaken for polypi.

Stated Meeting, Thursday, May 6, 1875, Dr. A. H. Smith, President, in the Chair.

MUMMIFIED FŒTUS.

Dr. McCall presented a specimen of a mummified fœtus with the following history:

The Society will perhaps remember that some months since (see *Transactions of the Society* for February 6, 1873) I presented for its consideration a case of blighted ovum, which had been retained in utero in a mummified state for a period of about six months. I now beg to offer a fellow to that case in the present specimen, which, although in the main attended by similar phenomena, still presents one or two points of marked difference and questions of interest.

The history of the case in brief is as follows: Mrs. ——, aged twenty-four years, married five years, rather stout, though not plethoric, moving in affluence, and enjoying always the most excellent health, became pregnant with her second child

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about the middle of July, 1874 (catamenia ceased on the 16th). About the middle of September following (two months), her only child, a fine boy of three years, sickened with diphtheria and died after an illness of but a few days. The shock and distress to the devoted mother was naturally sudden and excessive and her grief protracted. Prior to this event all the symptoms of pregnancy were present. After it they gradually disappeared, and until Christmas time, when she should have "quickened," she would "feel faint" upon the slightest exertion, particularly in the erect position, once or twice losing all consciousness. Three weeks after the death of her child a yellowish watery discharge came on per vaginam, which, though not profuse, was very offensive. This lasted for over five months. Her "morning sickness" lasted till the sixth month, after which she enjoyed exuberant good health, which has continued, with exception of the confinement attendant upon her after delivery, till the present day. Not having felt the motion of the fœtus at the usual time, I was consulted and advised an examination to determine pregnancy, but having felt, a day or two after, what she supposed faint motion (probably that of intestinal gas) the mother declined an examination, and allowed the case to progress until within two weeks of her expected confinement. Being so fleshy, the natural alteration in her person of advanced pregnancy was not noticed as promptly as it otherwise would have been. At this period, however, upon consulting me for some slight ailment, my attention was called to this fact, and answers to my inquiries induced me at once to demand an examination. This was made by Dr. Getchell, of this city, and myself, and the fact became at once patent that either she was not pregnant at all or had become so very lately, as the womb was but slightly enlarged. In consultation the true cause of difficulty was surmised, and she was placed on moderate doses of ergot, twenty-four hours after which uterine contraction commenced and continued for twelve hours, when the accompanying specimen was discharged, followed a couple of hours later by the placenta. Some hemorrhage occurred subsequently, which was readily checked, and she made a rapid recovery.

The fœtus, seemingly of about three and a half months, presents nothing worthy of note beyond the characteristics usually attending these cases. The placenta, however, is found to be much larger than the apparent development of the child will warrant, and is evidently fatty and calcareous. A microscopic examination of it detects nothing more.

While it is true that some prominent gynecologists maintain that the retention in utero for more or less time of the dead

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fœtus is the rule rather than the exception (in the early stages of pregnancy, at least), its expulsion being more dependent upon the vitality of the placenta than itself, still these cases of protracted uterine toleration are sufficiently uncommon to claim our interest and investigation. Hohl, Credé, and Velpeau attribute the phenomena attending them principally to some disturbance of the circulatory apparatus, from which the child derives its nourishment, gradually producing impairment of development and slow death; in the majority of their cases the cord was at fault. In the present case the cord seems normal, and did not, as in my former specimen, encircle the neck, a condition fraught with so much danger in the early stages of pregnancy. Were there any signs of placental apoplexy with hemorrhage, naturally to be expected after violent mental shock, the cause of death would be apparent. The fatty condition of the placenta will, I think, hardly account for it, since it is not so completely changed in structure as is often seen after healthy births, nor is it certain that this state existed prior to fœtal death.

It seems probable to me that in this case life was lost from maternal impression in the first place, and the placenta retaining its vitality became gradually metamorphosed, assuming its fatty state, without putrefaction, later, ultimately dying in its turn, its death changes being almost imperceptible to the uterus, which, becoming thus insensibly accustomed to the presence of the foreign body, just as it occasionally does to a slow growing polypus or tumor, tolerated it until a slight interference on our part induced its expulsion.

Another point of interest worth regarding lies in the fact that in all the recorded cases that have met my attention, with the exception of one, mummification with protracted retention has always been in twin-conceptions, nature seemingly holding in abeyance her usual rules for the benefit of the still living occupant of the womb.

Dr. Goodell remarked that an interesting medico-legal question might arise under these circumstances.

A husband might be away from home for several months, when the birth of a child of such small size would give rise to very ugly suspicions.

Dr. McCall said that in this case the pregnancy was so ardently longed for that, as soon as it was suspected, he was sent for to verify the diagnosis. It was, in fact, a red letter day with the people, and the fact caused the time to be more firmly marked in his mind. He thought the case was undoubtedly one of nine months' pregnancy lacking two weeks.

Dr. J. L. Ludlow thought with Dr. Goodell that the case

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was of great medico-legal value, and should be carefully recorded.

HEMORRHAGIC LABORS.

Dr. Ellwood Wilson reported the following cases:

Case I.—Mrs. W., aged —; third pregnancy; estimated time for confinement, April 5, 1869. On the morning of April 11, about 11 o'clock, while watering her flowers with a quart watering-pot, she slipped and had a sharp pain in her side; was aroused from sleep at 4 P.M. and found herself flooding; this continued moderately through the afternoon. The nurse assured me that at 7 P.M. she was not pale, nor did she complain of exhaustion. I saw her at eight o'clock: the touch revealed the vagina filled with clots; a large amount of blood had passed. The os would barely admit the point of the finger; it was fairly soft and yielding. I passed the finger within the os, and found the clots to pass from between the membranes and the womb. They were forced out with each slight pain; there was no tension upon the bag of waters. The child presented by the vertex, but was so high that I could not detect the position. Ruptured the membranes and gave fl. ʒ i. doses of wine of ergot every fifteen minutes till six doses were taken. A large amount of liquor amnii passed; it was not discolored. The womb immediately condensed and the bleeding very much diminished. Ergot was continued at half-hour intervals for six doses, when labor-pains were excited; but these pains were not decided. The bleeding ceased externally. Touched at 5 A.M. Os slightly opened, and the pains set in with bearing down efforts, and recurred every two or three minutes; the uterine tumor remained hard during the intervals of the pain, showing the patient was ergotized. The labor now progressed rapidly, and 8.26 A.M. the child was born. It was a male, and was pale, livid, relaxed, with no perceptible pulsation at the heart; under the usual treatment it soon reacted. A very large amount of coagula escaped with the placenta. More than one-half of the uterine disk of the placental surface was occupied by a coagulum.

Case II.—Mrs. J., aged —; third pregnancy; ceased to menstruate June 23, 1872; was expected to fall in labor March 28, 1875. In the evening of March 23 she lifted her little boy, about two years old, upon her lap to kiss him "good-night." She felt a slight blow against her stomach, but gave it but little consideration; feeling drowsy, she lay down upon the sofa in her parlor and fell asleep, and did not awake until 10 o'clock,

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when she found herself wet and a warm fluid passing from the vagina. She was greatly startled upon discovering that it was blood, and that her clothes were saturated with it. She immediately went to her bed-chamber, feeling faint, and, as she said, flooded dreadfully. I saw her about 11½ P.M. She was pale and much exhausted; her clothing and bed were saturated with blood, which was passing from the vagina. There were no uterine pains; the os was not opened, but the condition of the os and neck showed that she was near her term. I passed the finger through the os and ruptured the membranes; the liquor amnii passed out slowly, mixed with blood. Placed her in a horizontal position, elevating the hips, and gave wine of ergot fl. ʒ ij. every fifteen minutes for four doses, which with the escape of the waters brought on uterine condensation, and the bleeding ceased externally. The wine of ergot was given in fl. ʒ i. doses from time to time, so as to maintain sufficient uterine contraction to arrest the bleeding. At 2 A.M. of the 24th labor-pains were fairly established; previous to this time the os had not dilated, but it now began rapidly to do so, and the head engaged in the excavation. At 3.45 A.M. the child was born: a female, rather under the usual size. A large amount of coagula passed from the vagina after the birth of the child. I thought as much as two-thirds of the uterine surface of the placental disk was occupied by a coagulum. I carefully watched this case from the time I saw her, intending to make version if the bleeding did not cease, as soon as the condition of the os would admit of it; and, although the ergot and escape of the waters caused a very decided condensation and hardening of the uterine tumor, and arrested the bleeding externally, causing a fair reaction with the patient, there were no well-marked labor-pains until near two o'clock, but when they were established they were frequent and strong, and the delivery occurred without further interference.

Case III.—Mrs. B., aged —; third pregnancy; ceased to menstruate April 20, 1874; her estimated time for labor was January 25, 1875. She was absolutely well throughout her pregnancy. January 23, at 5 P.M., sent me a note saying she was not very well. I saw her at 5¼; she had some slight pains at intervals of from ten to fifteen minutes; thought they were of but little account; there was no constitutional disturbance. As I desired to make a distant visit, and the nurse was with her, I requested permission to make the touch, so that I might better estimate how long I could be absent. While in the act of lying upon the side of the bed she called to me saying, "The waters have broken." In making the touch, I

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felt the warm fluid gushing from the vagina, but as the os was not opened I merely ascertained that the head was presenting, and did not discover she was bleeding until I removed my hand. I directed she should be placed upon the bed as soon as possible; before this could be done she lost a large amount of blood, several quite large coagula falling upon the carpet, and she felt faint. I immediately ruptured the membranes, when a large quantity of liquor amnii escaped, mixed with blood. I gave wine of ergot, fl. ʒ ij., and repeated the dose in fifteen minutes. This brought on contractions. The os opened nicely, the bleeding ceased externally, but she still felt faint, and although the os was soft and well-opened, and the head fully engaged in the excavation, she appeared without the power to bear down. The forceps were at once applied, and the child delivered without difficulty; it was a female, still-born. Several large coagula passed from the vagina, following the birth of the child,—I suppose as much as a pint and a half; fully one-half of the uterine surface of the placental disk was occupied by a coagulum. Child presented vertex first; was born at 6 P.M., forty-five minutes from the time I first saw her, and about three hours from the commencement of the first recognized pains. I could not account for this accident, except it was caused by the change of position. The amount of blood lost was estimated at fully two quarts.

Dr. Ludlow asked whether any of these cases had shown any predisposition to hemorrhage.

Dr. Wilson replied that they had not.

In answer to several questions, Dr. Wilson further stated that he preferred using the wine of ergot because it was less nauseating to the patient.

He had used Squibbs' fluid extract of ergot, but did not consider it better than the well-prepared wine.

In cases of placenta prævia, he dilates the os, detaches the thinnest portion of the placenta, carries his hand between it and the uterus, passes it up, and delivers the child by version.

Dr. Goodell asked what measures he adopted in cases where the os is undilatable.

Dr. Wilson replied that in all cases he used ergot. He never failed to find the os uteri dilatable. He had seen twenty-nine cases of placenta prævia, partial and complete, with but one death. The woman who died had been delivered safely, and was doing well, but was found out of bed and dead the next morning. Her attendant was drunk.

Dr. Stewart suggested that in case the uterus was hard and rigid at about the eighth month of gestation, with great hemor-

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rhage and no dilatation possible, the ergot would be of no service.

Dr. Wilson replied that he has taken his seat and waited hours until the uterus was dilatable, giving ergot all the time.

Stated Meeting, Thursday, June 3, 1875. Dr. A. H. Smith, President, in the Chair.

Dr. Kelly read the following history of a

CASE OF POST-MORTEM DELIVERY OF A LIVING CHILD.

I attended Mrs. M. (aged at death forty years) in her sixth labor, March 22, 1871, and in her seventh labor, May 27, 1873. Both labors were unusually rapid, but her last lying-in was a protracted one, consequent on a fright received the third day after delivery. She suffered from pain in the region of the heart, with violent action of that organ, and it was many weeks before she was able to resume her household duties. Her eighth pregnancy was expected to have terminated about the 20th of April, 1875. In the fifth month of this last pregnancy I was called to her and found her threatened with abortion, the symptoms of which passed by under the use of opium and quiet. My attention was also directed to a difficulty of breathing which she experienced, as well as a laryngeal catarrh which had annoyed her some time. On auscultation the respiratory murmur was found to be normal. All over the front of the chest there was heard a soft systolic murmur, with greatest distinctness over the region of the heart, though not localized over any particular valve. Posteriorly there was heard a loud, rough murmur (also systolic), following the region of the spinal column, with greatest intensity in the interscapular space, and faintly heard low down in the lumbar spine. It was also heard over both scapulæ.

A probable diagnosis of thoracic aneurism was made, though there was no aphonia, no evidence of a tumor, nor any hæmoptysis. I saw her subsequently at intervals, and always substantiated the above physical signs, and in addition, at my last visit (made one week previous to her death), I detected dulness over the upper third of the sternum, and on making pressure over the supersternal notch a marked upheaving impulse was communicated to the finger.

At midnight of April 13th, one week previous to her expected confinement, I received a hasty summons to see her, the messenger stating that "she was smothering."

I hastened to her residence, which was about six squares from my own, and on entering her room was quite horrified to find

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her dead. She was still warm, but there was no heart-beat or respiratory murmur, and frothy mucus oozed from her mouth and nostrils. On listening over the uterus, I thought I heard a feeble heart-beat of the child, and immediately made a vaginal examination, from which I learned that the vagina was soft and dilatable, that the os admitted two fingers, that the head lay at the superior strait, and that the membranes were intact.

I immediately informed the husband that though there was no doubt as to the death of the mother, there was a possibility of the child being still alive, and expressed my willingness to try to effect delivery, to which he gave consent.

I greased my hand thoroughly and passed it up the vagina, bored through the os, which gave way nicely, ruptured the membranes, and seizing both feet successively, I performed version and extraction, with little more difficulty than I have experienced when executing this manœuvre within the living pelvis. The child was a female of average size and almost still. The heart beat slowly and feebly, but there was no attempt at breathing until one hour's faithful work with artificial respiration had been given it. In another hour, however, respiration was fully established, and the child has since done well.

I have endeavored to compute with as much accuracy as possible the length of time which elapsed between the death of the mother and the delivery of the child, and think that about fifteen (15) minutes would be a fair estimate.

There was no autopsy of the mother.

Dr. E. Wilson referred to a case in his practice in which a woman, who had suffered from hemorrhages of the lungs, was taken with a profuse hemorrhage and died in his presence. The touch revealed the os undilated and the cervix intact.

He asked permission to perform the Cæsarean operation, but was refused.

Dr. Goodell referred to a paper of Dr. Aveling, in which he states that live children have been born one-half hour after the death of the mother. Out of forty cases, several were delivered later than the one of Dr. Kelly.

Stated Meeting, May 6, 1875.

Dr. Ellwood Wilson read the following paper on

VERSION IN CONTRACTED PELVES,

in reply to the paper on the same subject read by Dr. Wm. Goodell at the meeting of the Society, Feb. 4th, 1875:[1]

Mr. President and Gentlemen:—The great interest I feel in the subject now before us for discussion leads me to again

[1] See the August, 1875, number of this Journal

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appear before you, to urge with what force I may some points in opposition to the treatment of labors with contracted pelves by version, as recommended by Dr. Goodell in the paper read before this Society in February last. At a previous meeting I stated the mortality to the child in pelvic natural labors to be 1 in 3 (Churchill and others); but as this estimate includes all children born dead in pelvic labors, by excluding such cases as were born dead from causes other than those dependent merely upon pelvic labor, we find the mortality in pelvic natural labors to be estimated

By Hodge, 1 in 7.
By Meigs, 1 in 11.
By P. Dubois, 1 in 11.
By Churchill, 1 in a little more than 4.

I stated, further, that the mortality in these cases arises from causes incident to such labors, and cannot be obviated by the adroitness of any expert, namely, interruption to or cessation of the placental functions.

In artificial pelvic labors, without defect in the natural pelvis, the mortality is increased to 28 or 33 per cent., or to 1 in 4, or 1 in 3 (Hodge's table), thus showing that version is a very serious operation to the child.

Dr. W. Goodell, in a paper recently read before the "Philadelphia County Medical Society" (*Philada. Med. Times*, March 20, 1875), in alluding to the mortality to the child in ordinary pelvic cases, says: "For this mortality fifty per cent. is, I think, a very low estimate;" but his opinion is offered without statistics, and I regard these figures as much overrated.

While version in contracted pelves gives a fatal result to the child as high as from 66 per cent. to 75 per cent., or from $\frac{2}{3}$ to $\frac{3}{4}$, or from 2 in 3 to 3 in 4 (Capuron, Cazeaux); and as these statistics must necessarily include a large number of cases with but a slight defect in the pelves, as was the case with many of those reported by Dr. Goodell in the paper read before this Society, viz., Case No. 1, pelvis, $3\frac{1}{2}$; Case No. 3, pelvis, $+3$; Case No. 4, pelvis, $3\frac{1}{2}$; Case No. 5, pelvis, $3\frac{33}{100}$; Case No. 8, pelvis, $+3$; Case No. 10, pelvis, $3\frac{1}{2}$, we can readily understand and fully agree with Velpeau that when the contraction is as great as to 3 inches, or approaching three inches in its antero-posterior diameter, the mortality may reach the enormous amount of 97 per cent., or nearly all. And many authors emphatically state that when version is performed in pelves of 3 inches or -3 in the conjugate diameter, the result of the labor is almost always fatal to the child (Cazeaux, Leishman, Chailly-Honoré).

Leishman very positively declares that, with a pelvis of 3 or

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—3 inches, version should never be attempted. Cazeaux and others confirm this statement.

Thus, whilst in pelvic natural labors one child in from 7 to 11 dies; in artificial pelvic labors, without defect in pelves, 1 in 3, or thereabouts; in artificial pelvic labors with contracted pelves, 2 in 3 or 3 in 4; and when this contraction amounts to 3 or —3, nearly or quite all of the children die; on the other hand, in cephalic labors the death-rate to the child is 1 to 30 or 1 to 50. Version is also a painful and dangerous operation to the mother, proving fatal to her in the ratio of 1 to 10½ (Cazeaux) or 1 in 14 (Churchill). With such results as these, version, in my opinion, should never be made without good and sufficient reason, such as prolapse of the cord, avoidable or unavoidable hemorrhage, etc., when we have a pelvis of such capacity as may permit a woman to give birth to her child at full-term of pregnancy unaided. Now, what is the minimum capacity of a pelvis through which a child, at full-term, may be born by the unaided efforts of the mother? We find it to be, according

To Meigs, 2½, —2¾ inches.
To Cazeaux, 2½, —2¾, —3 inches.
To Hodge, 2¾, —3 inches.
To Gardien, 2½, —2¾, —3 inches.
To Churchill, 2¾ inches.
To Madame Boivin, 2 1/12, —3 inches.

And in a table of 38 cases of labors with deformed pelves, the last writer informs us that 8 cases occurred naturally. Chailly-Honoré asserts that labor may occur naturally in pelves of —3 inches. And to this array of statistics I add a case of my own of 3 or —3 (see page 678).

If, then, women having pelves of 3 or —3 inches can be delivered of living children by their unaided efforts at full term of pregnancy, and if it be a fact that in contracted pelves, in the great majority of cases, the narrowing is at the superior strait,—as stated by Hodge, Meigs, Simpson, Cazeaux, Leishman, and many others,—and if this narrowing is further merely marginal, since it is caused most frequently by the sharp angle of the promontory of the sacrum dipping too saliently into the brim, we can readily understand how a woman may in this special form of contraction overcome this obstruction by a well-directed and timely effort. Hodge, referring to the compressing power of the forceps to overcome the difficulty in this form of labors, says the compression will be of but short duration. That women do thus accomplish their delivery through pelves of 3, +3 and 3½ I can testify, the head passing over the point of constriction with an audible sound and a jerk-like sensation

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(Goodell, Case No. VIII., and others), which I have repeatedly felt while "touching" when conducting such labors, and also while using the forceps. So distinct is this sensation, that I have thought the forceps had slipped. Below this narrowing the pelvis is usually ample, and offers no obstruction to the delivery. Further, pelves narrowed at the superior strait are not symmetrically deformed, one side being more involved than the other; Leishman asserting that "in a majority of deformed pelves there is a want of symmetry." Authors almost universally admit, that in pelves narrowed at the brim the vertex is found presenting towards one of the lateral sides of the pelvis; this we find to be the fact in the table of cases now under discussion, and it is my own constant experience. This being established, and the pelvic brim being somewhat irregular in its opening, it is evident that the forces operating upon the child's head, inclining or forcing the vertex to the sides of the pelvis, will, so long as the child is floating in its waters and free to move in its spiral axis, have a tendency to drive the vertex towards the larger or more open side of the pelvis. Every obstetrician has experienced while "touching," when the membranes were intact and the head not engaged, the great facility and rapidity with which the vertex moves from one side of the pelvis to the other and back again during a pain. This is an important consideration for us to bear in mind during the management of labors with narrowed pelves, —whenever the woman is not able to accomplish her task without assistance,—as the head can be so grasped and brought down in the greatest capacity of the opening.

We have thus, upon abundant testimony, shown that it is possible for women to be delivered unaided at "full term" with pelves of 3 or —3 inches; therefore no woman should be subjected to one of the most serious operations in obstetric surgery (fatal to the mother in one of every 10½ cases), and one which it is, at times, almost impossible to accomplish, even with the aid of anæsthesia, and which also increases to so great an extent the mortality to the child; when the pelvis is no more contracted than those given in the paper of Dr. Goodell,—$3\frac{32}{100}$, $3\frac{1}{2}$, and "somewhat contracted." But if the woman fails to accomplish her delivery through a contracted pelvis, can she be assisted by the forceps without injury to her tissues and with safety to the child? So far as the mother's tissues are involved, the forceps, if skilfully used, should never injure them (Hodge); as for the child, in pelves of + 3 and $3\frac{1}{2}$ the result should generally be favorable; the forceps should never injure the child or mother (Meigs and Hodge).

Does the head flex and the vertex dip into the excavation in

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narrow pelves? The first process in the mechanism of labor is the increased flexion of the head, caused by the resistance offered by the neck and *os*; and according to Meigs this is equally the case with contracted pelves when the contraction is such as to prevent the head passing into the excavation.

Hodge says, most emphatically, in pelves of three inches the head will flex and the vertex project into the pelvis and become fixed,—this is in accordance with my own observation. In my opinion, the proper time for using the forceps is when the *os* is dilated or is dilatable (in some cases, where the contraction is great, the head rests upon the brim of the pelvis, and fails to press upon the *os*, which may become soft and yielding, but does not dilate); and as soon as the waters pass off it is found that the vertex is pressed into the excavation, and has become moderately fixed but not jammed. The child at full term weighs 6½ to 6¾ pounds; its conjugate diameter is 3½ inches. Now, to what extent may this diameter be lessened or diminished by the natural efforts of the mother, and by the careful interrupted compression of the forceps, with safety to the child?

Siebold says 6 lines.
Osiander, nearly 1 inch.
Velpeau, 6 lines.
Baudelocque, 4 to 6 lines.
Leishman, half an inch.
Meigs, 4 to 6 lines.
Denman, nearly 1 inch.
Hodge, 10 lines.

And I am positive I have seen it reduced 10 lines without injury to the child. The child's head diminished to this extent is brought within the control of the woman's natural efforts, or is reduced to such dimensions as may be readily brought through a pelvis of 3 inches by the forceps.

That the forceps are the proper and safest means for assisting women in difficult labor—where the pelvis is too small, or where the head is too large—has been the almost universally accepted rule of modern practice; a rule apparently unquestioned until the appearance of Sir James Y. Simpson's paper upon "Turning as an Alternative for Craniotomy and the Long Forceps," in 1847.[1]

Dr. Hodge declares that the use of the forceps as a means of delivery in difficult labors is a settled practice.

He taught and practised this method of delivering women, and gives a case in which he delivered a living child through a pelvis of 3 inches, the conjugate diameter of whose head meas-

[1] Obstetric Works, Vol. I., p. 393.

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ured $3\frac{10}{12}$ inches shortly after birth. This is said to be a "typical case"; nevertheless it is a record, and by one whose ability and truthfulness I cannot doubt. In immediate connection with this history he says, with the forceps to the child's head, by compression, and the resistance the head meets with by the sides of the pelvis, the head is moulded, it is elongated in its occipito-mental diameter, the parietal bones overriding each other at the sagittal suture, thus materially shortening the biparietal diameter; and we have cause to know many children have thus been born safely who would otherwise have perished. He further states that, with a pelvis of 3 inches, in the antero-posterior diameter, the forceps should be applied to the sides of the child's head, which can be done without accident to the child and with but little or no discomfort to the mother; and that such compression and traction as may, in the judgment of the operator, be requisite to overcome the resistance, must be made until it becomes evident that the child cannot be born, or that it is dead, when perforation should be resorted to. He cites cases where children have been delivered with safety through pelves of $2\frac{3}{4}$ inches.

This great teacher nowhere in his elaborate work recommends version as a means of delivery in labors with contracted pelves, or where the child's head is too large to pass, but especially advises against it, and always recommends the forceps, declaring that delivery can be accomplished with safety to both mother and child, in the great majority of cases, where the pelvis measures 3 inches and +3, and further states that if they fail to accomplish the delivery, the only remaining resource is craniotomy.

Dr. Dewees recommended the forceps for delivery in narrow pelves, and cites cases of successful delivery with pelves of $2\frac{3}{4}$ inches.

Those of us who have listened to the teachings of another able American obstetrician, Dr. Meigs, know that he taught and practised the feasibility of applying the forceps to the sides of the child's head at the brim of the pelvis, and in his writings he cites cases of successful delivery through pelves of $2\frac{1}{2}$ and 3 inches. On several occasions I have been present and assisted him in this operation. Dr. Jos. Warrington, another eminently practical teacher, recommended the application of the forceps to the sides of the child's head at the superior strait, and it is on record that he successfully made it. Mr. President, I think I have been present when you adjusted the forceps in this way. Denman, Dubois, Chailly-Honoré, Baudelocque, Velpeau, and many others have taught and asserted the practicability and success of this mode of using the forceps. During ten years that I was

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the assistant in the Philadelphia Lying-in Charity, I applied the forceps to the sides of the child's head in all cases where the head was arrested at the brim, either from narrowing of the pelvis or too large a head; and for the eight years that I held the lectureship in that institution I taught, demonstrated, and practised this method. From the time of the organization of this charity until I retired from it, including the eighteen years I had the active management of it, the mortality to the mothers was less than half of one per cent. in a table of nearly seven thousand cases; and there was during that time no case of vesico-vaginal fistula, and but one instance in which the rectum was lacerated, and that occurred in a labor terminated without instruments. I have pursued this course in private practice for thirty years, during which time I have had charge of many cases of labor with contracted pelves, and have had very satisfactory results. I am confident there are many physicians now present who have used the forceps in this manner, and with like results. I will here mention, as confirmatory of the power of the natural efforts of the woman, and also of the efficiency of the forceps, the case of Mrs. McN——, whose pelvis was 3 or —3. The dimensions were carefully taken by myself, with the assistance of two competent physicians, and our joint opinion confirmed the above measurement. I on two occasions delivered her of living children with Davis's forceps. She had previously been delivered by craniotomy, while under the charge of skilful and conscientious physicians; and it would be extremely unfair to suppose they would have resorted to this mode of delivery except from a conviction of duty. Yet she subsequently did deliver herself at full term of a living child. In still further support of the efficiency and safety of the forceps as a means of delivery in narrow pelves, and their great superiority over version, I refer to the following authorities:

Churchill cites cases in which women have been safely delivered of living children by the forceps with pelves of $2\frac{3}{4}$ inches, and declares that unless the child can be delivered by forceps in pelves of this capacity there is no resource but embryotomy.

Baudelocque recommends the forceps in pelves of $2\frac{1}{2}$ inches and upwards, for the safety of both mother and child.

Cazeaux recommends the forceps for delivery in pelves of $2\frac{3}{4}$ and 3 inches, saying that version may be resorted to in pelves of $3\frac{3}{4}$ inches, differing with Simpson, Madame Lachapelle, and Radford, who say that version should be made in narrowed pelves when the child presents favorably and the narrowing is less than $3\frac{1}{2}$ or $3\frac{1}{8}$; and he further instructs us that it is an especial condition for version, that there be no disproportion between the size of the child's head and the walls of the woman's pelvis.

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Smellie recommends the forceps in contracted pelves in preference to version.

Madame Boivin recommends the forceps in contracted pelves.

Chailly-Honoré says that when the vertex presents with a pelvis of 3 inches, the case should be left to nature; and if the woman fails in her efforts, we should use the forceps. He advises their use in pelves of 2½ inches, and cites successful cases of delivery with pelves of that measurement.

He also informs us that all obstetricians, up to 1866, are agreed to consider malformation of the pelvis as a motive for the exclusion of pelvic version, and continues, "How often have we seen women brought to the hospital with the child's head still held in the pelvis, the trunk having been long before extracted, and the head having resisted energetic traction. I saw a case of this kind in which the trunk of the child was extracted thirty-six hours before the head was delivered."

The author further says that version in contracted pelves almost always endangers the life of the child, no matter how skilful the operator may be. Facts observed every day in our hospitals prove this, and will convince any impartial observer, who will make a careful examination of the laws which regulate the passage of the child's head through a contracted pelvis. If the head presents first the expulsion may occur spontaneously, even if the diameter of the pelvis is less than 3 inches; and if it fails, recourse should be had to the forceps.

Version should not be made where there is any disproportion existing between the head of the child and the mother's pelvis. And he further informs us that the very few cases of children extracted alive by means of pelvic version, have *all* occurred in cases where the pelvis has not been deformed in all of its diameters, and where the children have had small and compressible heads. In Case No. VIII. of Dr. Goodell's paper the child weighed five pounds and six ounces, and was at 256 days of gestation, or but little over eight months.

Ramsbotham says that, as a substitute for the use of the forceps, he cannot sufficiently condemn version, and that he should not have mentioned it except that it is advocated by Simpson, who, however, merely recommends it in place of craniotomy.

Gardien gives cases of successful delivery unaided, in pelves of 3, —2¾ inches, and in rare instances 2½.

Denman recommends version in deformed pelves with malpresentations.

Robert Collins recommends version when there is no disproportion between the child's head and the pelvis.

Edward Rigby makes no allusion to version for delivery in contracted pelves, but recommends the forceps.

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Capuron says version is always dangerous to both mother and child, and especially alludes to the increased dangers to both in contracted pelves; to the child by dragging and traction on its spinal column, with the danger of luxation and detruncation; to the mother, from laceration and contusion of her tissues and the great difficulty of performing the operation; and concludes that it would be useless to "turn" the child unless the disproportion should be very slight.

Churchill says, version, in slightly narrowed pelves, is more than questionable.

Blundell recommends forceps when the head is detained at the superior strait.

Robert Lee says, in cases of slight deformity of the pelvis, the case should be let alone so long as the head advances and no unfavorable symptoms are present, and when it becomes necessary, aid with the forceps.

Here, gentlemen, upon the evidence produced, I rest the assertion that women can be delivered with safety to both mother and child at full time unaided, with pelves of 3 inches and upwards; and if the mother fails in her efforts, with a pelvis of +3, the case is easily and safely within the control of a master with forceps; and that Hodge is fully sustained in his assertion that delivery with the forceps is the settled practice. Now, let us examine some of the arguments brought forward by the "versionists," by which they seek to turn aside and ignore all the natural powers and forces provided by the Creator for the relief of woman in her travail, and aim (in vain) to bring to naught the promise that "in sorrow thou shalt bring forth children."

1. It is claimed that delivery may be more rapidly accomplished.

With so great a man as Sir James Y. Simpson as authority, this is the first time in the history of obstetrics that rapid delivery, forcibly dragging the child through a narrow pelvis, through an over-stretched neck and os, through the vagina and over the perineum, is claimed to be a means of safety to the mother. In Case V. of Dr. Goodell's paper, "the *os* did not dilate," "I turned the child and delivered it alive in less than three minutes," etc.

With such rapid and forcible delivery as here described, the mother's tissues must necessarily be liable to laceration and contusion. The neck of the uterus may be injured, for time is not always allowed for dilatation. In Case III. of Dr. Goodell's paper, "two fingers of the left hand were then squeezed into the *os*, and ultimately a third."

The vagina cannot be thus rapidly forced open without the

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danger of laceration. The perineum would in all probability be torn. But this is said to be of little importance. True, it may frequently be relieved by a few stitches, but sometimes the rent extends into the rectum, and, after repeated and skilful operations, may fail to unite,—the poor woman remaining for the rest of her life alike disgusting to herself and her friends. This, in my opinion, should not be regarded as a trivial accident, but should always be guarded against with the most scrupulous care. I always feel disgraced when it occurs in my practice. Or the parts may become contused, and inflammation, sloughing, etc., follow, resulting in vesico- or recto-vaginal fistula, or septicæmia, or even the death of the patient; besides, rapid deliveries are sometimes productive of profound fainting fits, followed by hemorrhage, difficult to control and even fatal in result. The most alarming cases of post-partum hemorrhage that have occurred in my practice have followed rapid delivery. This has, in my experience, been so frequent a sequence to such labors that, for many years, I have adopted the plan of remaining with the patient a much longer time than I find it necessary to do in ordinary cases.

2. Another argument is, that when the head enters the pelvis by its base, the parietal bones are more easily compressed and override each other better than they do when the head presents by the vertex.

Simpson avers that when the head presents in narrow pelves, it presents by its vault, and as the labor progresses this presenting part becomes widened out to a greater extent, thus making it impossible for the head to engage. I have previously referred to Meigs and Hodge in proof that the head in vertex-presentations, with pelves of 3 or +3 inches, does dip, and the vertex does enter the brim. Leishman, reviewing Simpson's paper, declares that, in attempting to prove that the head in narrow pelves presents by its vault, etc., he has attempted too much;[1] and Dr. Hodge, after a careful and elaborate review of the same paper, dissents, and does not admit that the head is more compressible when it presents by the base than it is when it presents by the vertex; and says the head is not flattened out (in narrow pelves) as represented by Simpson, but demonstrates that one pole or extremity of the bi-parietal diameter rests on the pubes, and the other glides over against the promontory, making the head oblique at the brim. The head thus compressed between the sacrum and the abdominal muscles, and subjected to the pressure of the uterine contractions, is diminished by the overlapping of the parietal bones at the sagittal sutures, and is therefore not flattened at its vault, but, on the other hand, in-

[1] System of Midwifery, p. 493.

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creased as to its convexity. These observations of Meigs, Hodge, and Leishman are precisely what I have observed in my own practice. I therefore cannot accept the first of the series of arguments brought forward by Dr. Goodell in favor of version.

3. Simpson prefers version to craniotomy or the long forceps, because we may thus sometimes save the life of the child. In his paper upon Version he repeatedly makes this pointed preference, "but it is principally as a substitute to craniotomy," etc.[1]

There is a great want of distinctive accuracy in the table of cases cited by Dr. Simpson, for we find no evidence that the pelves were measured except in two of the forty cases given by this great author. No. XXV., in which the antero-posterior diameter is given at 3¼ inches; and in this case the head resisted "even very strong traction on the inferior jaw and shoulders," but delivery was subsequently effected without assistance, the head being "expelled by the action of the abdominal muscles;" the child gasped but did not live. And No. XXXV. In this case the antero-posterior diameter was given at "about 3 inches"; the child was still-born.

Dr. Goodell refers especially to No. I. of Simpson's cases. We find by reference to it the pelvis is designated as distorted, and no measurement given; the child was still-born. In the balance of his cases cited, the pelves are spoken of as "distorted or contracted."

But as I do not admit the justice of the comparison between craniotomy and the use of the forceps, for either of which version is thus offered as a substitute, nor accept the conditions laid down by Simpson for the use of the forceps, nor his mode of applying them, I will not further allude to his statistics.

4. The trunk of the child serves as a better and safer means of traction than the crotchet (Simpson).

This may be admitted. As the crotchet is generally fatal to the child,—and I regard it as a very dangerous instrument for the mother,—nevertheless, if the child's body is to be dragged upon with a force of 130 pounds, and pulled out with the arms either over its head or brought down,—that is, "neck or nothing,"—we are compelled to regard this mode of delivery as attended with imminent danger to the child's life.

5. The child's neck can sustain with impunity a very great strain,—120 lbs. and more; "and this great weight (130 lbs.) I certainly have, *on several occasions*, thrown on infants' necks, etc. I have broken the neck but once." Goodell, *Philadelphia Medical Times*, p. 387.

[1] Obstetric Works. First Series, Vol. I., p. 475.

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Meigs informs us that an unborn infant will not safely bear a greater traction than it will after its birth; and, further, "he that makes rude traction upon the child's neck does a pernicious thing."

Cazeaux says that traction upon the child's neck, when there is a great obstacle to its birth, is fatal.

Dubois and Desormeaux say that traction upon the child's neck is more hurtful than beneficial.

Hodge writes: "It would be very easy, from the records of the profession, to detail the horrible results of forcible traction upon the limbs and body of the child, when such traction was made not at the proper time or in the proper direction,—when brute force has been substituted for art and science. Perhaps there are but few practitioners who have not seen or heard of cases where the strength of two individuals has been applied to the body of the child, while that of three or four, or even more, attendants to the body of the mother, to accomplish the delivery of the head after the body has been born. That the child should ever escape with its life under such circumstances is surprising, but it is not to be wondered at that the spinal marrow has been fatally injured; that the spine itself has been dislocated, or even fractured; that the limbs have been torn off, or that, in some unfortunate cases, the body of the child has indeed been delivered, but the head remained impacted in the strait of the pelvis. Surely, in this present state of art and science, such practice is exceedingly reprehensible, not to say positively criminal."

Radford says that a force sufficient to greatly compress the sides of the cranium is a procedure at variance with all scientific views, and incompatible with the safety of both mother and child.

Nor can I be persuaded to believe that an unborn child can with safety bear a tractive force upon its neck, "with a pump-handle motion," of 120 lbs. or more, because a dead infant's neck is found to sustain a weight of 105 lbs. before the spinal column yields, or 120 lbs. before the body parts from the head; yet Dr. Goodell informs us that he has twice delivered living children, after using so much force as to cause their necks to "snap," but not to break, and that he has (Am. Journ. of Obstetrics, Aug., 1875, p. 208) on *several* occasions delivered living children after throwing on their necks a weight of 130 lbs.

6. The child may continue to live where great delays have existed with the body delivered and the head detained at the brim (Simpson).

This is the consolation offered to us for the frightful dilemma in which we may find ourselves, after making version and find-

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ing it is impossible to effect the delivery of the child. But earnest, conscientious writers, Denman, Hodge, Meigs, and others, to whose testimony I add my own, declare that they are not able to confirm this statement. Dr. Goodell (*Philadelphia Medical Times*, March 20, 1875) says, "five minutes may be too long and prove fatal to the child."

7. That the umbilical cord may seek shelter or be protected behind the promontory of the sacrum, and thus avoid compression.

It is not possible to suppose this could be the case, or that the cord could be moved by any manipulation from the contracting grasp of the uterus through whose neck the fingers had just been squeezed to make version, and where it was impossible to bring down both hips, and where powerful traction was required to bring down one limb, and where the neck was firmly pressed by the head of the child, and added to this the pressure of the hand of the operator in bringing down the arms, together with the counter pressure caused by the bony canal of the pelvis. One moment's thoughtful reflection, and one case to test this suggestion, will suffice to answer it.

I ask your indulgence a little longer while I refer to the statistics brought forward by Dr. Goodell in the paper now under discussion, in which he attempts to establish version as a means of delivery for women in labor with contracted pelves, and which form the basis on which he seeks to justify a traction of 130 pounds upon the neck of an unborn infant.

Case I.—Here the pelvis was 3½ inches in its conjugate diameter, evidently a marginal narrowing, because the head passed the brim with a jerk, which was followed by no further difficulty in the delivery.

The indication for version was clearly established by the prolapse of the cord. The capacity of the pelvis was such as to admit of delivery by the natural efforts of the woman, or with her effort aided by a master with forceps, and, therefore, so far as the bony pelvis was concerned, version was not demanded.

Case II.—In this case the pelvis was ample in its capacity; the head presented normally, and version could not have been justified except for a great emergency; but as there were three competent physicians engaged in the case, it would be very unfair to question their united judgment or their deliberate action.

Case III.—This is an interesting case. The woman fell in labor with her first child at seven months of gestation; the labor continued forty-eight hours, six of them being occupied with expulsive efforts. When the child was born it weighed

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five pounds. Her doctor (this is an important consideration with a patient, and I think justly so, because, as in this case, she placed her life and the life of her unborn child in his keeping) told her she could not give birth to a child at full term. In her second pregnancy he urged her to have the induction of premature labor. Naturally dreading so formidable an operation, she declined to submit to it, and she was placed under the care of Dr. Goodell. The capacity of her pelvis was estimated at +3, say 3⅛, inches. After a few hours of labor she complained of severe twitching and impaired vision, with headache. She was immediately etherized, the *os* forced open, version made, and the child quickly delivered. It weighed seven pounds twelve ounces. For this hurried delivery Dr. Goodell gave as a reason his "fears of an attack of eclampsia." He does not, however, inform us of the presence, previously to the onset of labor, of any of those symptoms which usually precede and accompany an attack of puerperal convulsions. It would be but reasonable to expect a woman to have some nervous symptoms during the first stage of her labor, when she had been informed by her doctor that she could not live through her labor, now that she was at "full term."

We are not told that this patient had, previous to falling into labor, headache, with local pains in the head, vertigo, impaired vision, nausea, loss of or irregular appetite, constipation, frequent and scanty urination, swollen feet or hands, tingling of the fingers, or albumen in the urine; yet, as a very general rule, patients exempt from these symptoms up to the onset of labor do not have convulsions; but, supposing the case as estimated to be one of impending convulsions, was version demanded? Evidently there was no great uterine irritability, because, "with two fingers of the left hand squeezed into the *os*, and ultimately a third," and the hand externally, the child was easily turned more than half a circle and had to be reversed.

Many excellent physicians do not recognize the necessity of hurried deliveries in puerperal convulsions, and in confirmation of this view of the subject, it is well known that convulsions do not always cease with the delivery, and that, in many instances, they do not occur until after the delivery, and moreover they frequently subside for hours or even days before the labor terminates—in my experience as many as five days.

But the patient was etherized. I know from abundant experience the controlling effect of ether in the treatment of puerperal convulsions. I gave it in puerperal convulsions in July, 1854, probably the first time it was administered for this pur-

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pose; and I then gave it under the earnest protest of two of my most esteemed professional friends, Dr. C. D. Meigs and Dr. William Pepper. The result was so satisfactory that I have given it in every case admitting of treatment that has since come under my care, with unabated confidence; but it does not always control the spasms. It is a well-established fact that in puerperal eclampsia, during a convulsion, the spasm or contraction of the uterus, at times, is so great that the child is driven with such force as to dilate a rigid os, and through the vagina—and through the perineum with one pain—so that "touching" before a convulsion and finding the os rigid and not dilated, and after the convulsion repeating the "touch," the child may be found extruded from its mother's body. The capacity of the pelvis in this case was such as would place the delivery within the natural efforts of the woman, or within such natural efforts conjoined with the assistance of a master with forceps, and therefore unless the emergency represented to complicate the labor was sufficient to justify version (which I cannot admit upon the evidence submitted), version was altogether uncalled for.

Case IV.—This case is the first in which version was decided upon from choice; the pelvis was "somewhere about 3½ inches." I like the expression, because I know of no means by which the measurement of the pelvis can be ascertained with mathematical accuracy. Hodge, Meigs, and Leishman, referring to this subject, say that the measurement of the pelvis can only be taken with an approach to accuracy. The child was undersize, weighing 5 pounds 14 ounces, with a pelvis but slightly deformed; and, certainly, twenty-nine hours is no unusual delay for a first labor. The case, therefore, comes under the classification of cases given by Chailly-Honoré. (Above, p. 679.)

Case V.—This woman had been delivered in two labors of living children. And this must be accepted as evidence that she might have been safely delivered subsequently. Her pelvis was estimated to be exactly $3\frac{32}{100}$ inches, and, therefore, the delivery was within the control of the natural efforts of the woman, or such efforts conjoined with the assistance of a master with forceps. I find no justification for lashing the handles of the forceps, or for dragging them against the neck of the bladder; and it is scarcely a good argument to offer such manipulations as a justification for version.

Case VI.—This woman had been delivered in four labors of living children by the aid of the forceps. In her fifth confinement Dr. Goodell saw her. He informs us that the forceps slipped. It was evident, therefore, they were not applied as taught by Hodge; and as the pelvis "was somewhat narrowed

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only," and the woman had repeatedly given birth to living children, we cannot regard the size of the pelvis in this instance as demanding version, but are compelled to attribute the performance of the operation to some other cause.

Case VII.—This unfortunate woman had been delivered in her first labor by "craniotomy;" her second was premature; her third was by "craniotomy;" her fourth by version, of a dismembered child. Her pelvis was ascertained to be exactly $2\frac{32}{100}$ inches. The child was found to be under the usual size. The pelvis was, however, upon more careful investigation, thus found to be smaller than first noted, but version was proceeded with by Dr. Goodell. He says: "I turned through the bag of waters, then broke it and seized both feet, but found there was not room enough to bring them down. I therefore let go the right foot and coaxed down the left one, by hooking two fingers over the instep. Very powerful traction was needed to pull the half breech and chest through the brim. Finding the child alive, I at once brought down the arms, and proceeded to extract the head. By a propelling power of about 50 pounds on the vault of the head, and a traction weight of not less than 120 pounds on the child's neck, aided finally by a pump-handle movement of traction on its legs, a dead child was born *in exactly twenty minutes* after the rupture of the membranes. Its neck was unbroken."

Let me ask you to notice especially the following points in this case: 1st. The great uncertainty of measuring the pelvis "with exactness," particularly when the patient is in labor. 2d. The difficulty and unavoidable delay in bringing down the arms, with or without regard to their integrity, and in dragging the head over the narrowed brim when that is 3 inches or less, "twenty minutes having been occupied in the operation," and we are recommended by Dr. Goodell (page 386, *Medical Times*, March 20, 1875) to pull at the risk of breaking the child's neck rather than allow the head to be detained at the brim five minutes. 3d. It is here plainly demonstrated that the child's life cannot be sustained for "twenty minutes" with its head at the brim of the pelvis and its body extracted, and with such powerful traction as was here made. 4th. That it is equally impossible to suppose the umbilical cord could slip, or could by any manipulation be moved into the space upon either side of the promontory when hugged by the neck of the uterus forcibly stretched open, as must have been the case in this instance. 5th. The result in this case corroborates the statements of Leishman, Churchill, Cazeaux, Chailly-Honoré, and others, that version in pelves contracted as this one is represented to have been, almost always proves "fatal to the

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child," and therefore should never be resorted to on this account, as well as because of the great and uncalled-for dangers to the mother.

CASE VIII.—This woman had, in her first confinement, a tedious labor, was delivered by "craniotomy," and recovered with a vesico-vaginal fistula. In her second pregnancy, labor was established 258 days following the cessation of her last menses, which ended on the 28th of November, 1873, and she was delivered on the 13th day of August, 1874. Deduct two days (I usually allow five in estimating the term of pregnancy), this would give her a duration of gestation of 256 days, twenty-four days less than normal pregnancy; her pelvis was +3 inches. Dr. Goodell (AM. JOURN. OF OBSTETRICS, Aug., 1875, p. 205) says: "I decided to turn as soon as the arms were brought down. Dr. Roberts made supra-pubic pressure with *all his might*, while I threw on the child's neck *all of my weight possible in a bent posture*. A distinct snap of some cervical structure was felt and heard; in less time than it has taken me to describe the process, the head *bounced* out of the grip of the brim, and the child was born. It weighed 5 *lbs.* 6 *oz.*" And thus was *pushed* and *pulled* into the world a baby weighing 5 *lbs.* 6 *oz.* at a little over *eight months* of gestation.

Permit me here to give a case from my own practice of somewhat similar character. Mrs. L. was confined with her first child under the care of a distinguished professor of obstetrics in a Western city, assisted by an eminent physician of the place. Her labor continued for three days and nights, and was finally terminated by the aid of the forceps. The child was still-born, its head was badly mutilated, the perineum was torn, the rent extending one and a half inches into the rectum. After a painful and tedious recovery, in due time she became pregnant again, and was told that she could not give birth to a child at "full term," that her life would be sacrificed in the attempt, and that therefore she must have her labor induced prematurely. Accordingly she came to Philadelphia for that purpose, and was placed under my care. After a very careful examination, I could detect no defect in her pelvis, and it was only by great persuasion I could prevail upon her to go to full term. The first pain she recognized as a labor pain occurred whilst she was at dinner, about three o'clock. She immediately sent for me and for the nurse. I arrived at her house a few minutes before five P.M.; the nurse was not yet there. Upon entering the house I heard the baby screaming lustily. It weighed 9 *pounds* 11 *ounces*. I had no opportunity of using the forceps. I mention this case in detail, because I consider it of importance as teaching

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us the necessity of carefully investigating every case of reputed defect of the pelvis that may come under our care, and the necessity of being on our guard about managing such cases in accordance with statements thus made as to previous labors.

Case IX.—This woman had, with her first child, a tedious and difficult labor, and she was delivered by "craniotomy." In her second labor she was delivered of a living child by version, through a pelvis said to be $2\frac{82}{100}$ inches. How far the result in these two labors may be attributed to the established difference of mortality in first and subsequent labors, I cannot say; it is, however, true that the death-rate to the child is far higher in first than it is in subsequent labors.

Case X.—This case gives us the history of another difficult first labor. The child was still-born, and the delivery was effected by the forceps. Her pelvis was $+3\frac{1}{2}$ inches. In her second labor version was made, and it was found impossible to effect delivery even after an exhaustive effort with a traction force of 130 *pounds*, and after the child's neck gave way, the head was perforated.

Thus, by examining the ten cases reported by Dr. Goodell, it appears that his table includes but one primipara. The character of the individual cases may be summarized as follows:

Case I.—Pelvis $3\frac{6}{12}$ inches. Still-born. Prolapse of cord.

Case II.—No defect in the pelvis. Convulsions.

Case III.—Pelvis +3 inches, say $3\frac{4}{12}$. Child living.

Case IV.—Primipara. Pelvis $3\frac{6}{12}$. Child living. Weight, 5 pounds 10 ounces.

Case V.—Pelvis $3\frac{82}{100}$ inches. Child living. Weight, 7 pounds 10 ounces.

Case VI.—"Pelvis somewhat narrowed." Child living. So were all her children in previous labors.

Case VII.—Pelvis $2\frac{82}{100}$. Child dead.

Case VIII.—Pelvis +3 inches, or $3\frac{4}{12}$. Child alive. Weight, 5 pounds 6 ounces.

Case IX.—Pelvis $2\frac{82}{100}$ inches. Child dead.[1]

Case X.—Pelvis $3\frac{6}{12}$ inches. Version followed by craniotomy.

Again, Case VIII.—The child was $36\frac{4}{7}$ weeks of gestation. The bi-parietal diameter at this period of gestation is estimated by Ritgen at $2\frac{10}{12}$ inches; by Stoltz, at −3. It weighed 5 pounds 6 ounces. We, therefore, must regard the head as having been very compressible. Its diameter was certainly less than three inches (−3 inches), whilst the mother's pelvis was more than three inches (+ 3 inches). In this case, therefore, there were no disproportionate relations between the child's head and the bony walls of the pelvis.

[Is not this a mistake? Should it not read "living"? See preceding —Ed.]

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Case IV.—The child was much under-sized. It weighed 5 pounds 14 ounces (just 8 ounces more than Case VIII., in which, by the authority of Ritgen and Stoltz, the bi-parietal diameter was estimated at less than 3 inches), whilst the mother's pelvis was $3\frac{6}{12}$ inches. There could, I venture to assert, have existed in this case no disproportion between the child's head and the mother's pelvis.

Cases I. and II.—There existed special causes demanding version.

Cases V. and VI.—Each of these women had repeatedly given birth to living children.

Case VII.—The child was still-born.

Case X.—The child was still-born. Version followed by craniotomy.

Case IX.—We have the unfair comparison between first and subsequent labors (with the possibility of some slight mistake in the fractional accuracy of the measurement of the pelvis, such as occurred in Case VII.).

Case III. is only another instance of comparison between first and subsequent labors.

In this recapitulation of Dr. Goodell's cases, the evidence in favor of version, so far as the result to the child goes, is not very satisfactory. And, as all the women survived their previous treatment, it is quite possible that the results would have been equally if not more favorable if the forceps had been skilfully used instead of version.

In Dr. Simpson's forty cases, he gives the measurement of the pelvis in but two instances (Cases XXV. and XXXV.), and in each of these the child was still-born.

Schroeder informs us that "in very great pelvic contraction, with a conjugate diameter of $2\frac{8}{12}$ inches, he has extracted live children," but does not give the diameters of their heads nor their weights.

Time fails me to discuss the modes resorted to for the delivery of women in the second, fifth, and seventh centuries, as the forceps were not then in use, or for any lengthy consideration of the fact that upon the introduction of the forceps in the seventeenth century there were some physicians indisposed to use them. Nor do I wish to enter into any description of the various kinds of instruments in use at the present time, or the manner of applying or using them, as my only object in taking part in this discussion has been to advocate the skilful and masterly employment of the forceps as the *best*, *most efficient*, and *safest known means* of delivering women whose pelves are contracted when the conjugate diameter is not less than three inches.

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STATED MEETING, JUNE 3, 1875. THE PRESIDENT, DR. A. H. SMITH, IN THE CHAIR.

DR. WM. GOODELL read the following reply to the paper on

VERSION IN CONTRACTED PELVES,

read by Dr. Ellwood Wilson at the last meeting:

MR. PRESIDENT AND GENTLEMEN:—It is the first time in the history of this Society, that a contribution, such as mine, was ordered to be printed in pamphlet form, in order to facilitate discussion. It is also the first time that a written discussion, such as Dr. Wilson's, was ever offered before us by one of its members. This shows the interest taken in the subject of my essay; but it, at the same time, put me to disadvantage. For while my critic has had over six weeks in which to prepare his paper, I have had but two, and those very busy ones, in which to frame a reply. And this is the more difficult because his paper is unfurnished with references to his authorities.

My reviewer begins by showing the fœtal mortality of head-last labors, and of those attended with contraction of the brim. But he overlooks the fact that I have offered a new mode of delivery, by which I claim that this can be reduced; and that I give reasons why an average head is more readily dragged through a narrow pelvis, than a large head through an average pelvis. He, on the other hand, gives the mortality of normal cephalic labors by way of contrast, but carefully avoids giving that of children when delivered by the forceps through narrow pelves. In the verbal discussion that ensued on the first reading of my paper, I described the mechanism of head-first and head-last labors in narrow pelves, showing the mechanical advantages in favor of the latter.

The arguments then adduced he has not attempted to meet. He simply replies in effect, that version is not proper, because Hodge, and Meigs, and Baudelocque, and Boivin, and Velpeau, and others, think differently. Is the art and science of obstetrics a *punctum stans*, and not a *punctum fluens?* And must it rest stationary where obsolete or obsolescent authors have left it? Every student knows the opinions of the authors whom he cites, and this Society will not, therefore, be intimidated by a formidable bead-roll of names. Witnesses are not to be numbered, but weighed. The watchword of science is *Nullius addictus jurare in verba magistri.* If, however, he looks to authorities I can give him some modern ones, who far outweigh all those he offers. Simpson, *facile princeps* of obstetricians, advocated turning in narrow pelves, and so did W. Tyler Smith. So do

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Leishman, Meadows, and Milne, who have published works on obstetrics; the great Cazeaux became a convert to the new doctrine. Barnes, Braxton Hicks, and Schroeder, the present leaders of obstetric thought, endorse Simpson's views. While Braun, who has had the unrivalled experience of over one hundred thousand labors, is unqualifiedly pledged to this mode of delivery in narrow pelves.

In proof of its usefulness in lessening the number of cases of craniotomy, Pugh (Barnes, *Obstet. Operations*, Lond., 1871, p. 226) "never opened one head for upwards of fourteen years." Smellie, one of the authors whom Dr. Wilson quotes, says (*Ibid.*), "Midwifery is now so much improved that the necessity of destroying the child does not occur so often as formerly; indeed, it should never be done, except when it is impossible to turn or to deliver with the forceps,"—placing turning before the forceps. Milne, "out of many cases" of turning, had to perforate but once (*Midwifery*, 1871, p. 239). Dr. Geo. Jones (*British Medical Journal*, 1871, vol. ii., p. 32) resorted to version in all cases of disproportion, and had no case of craniotomy in two thousand labors. Denman, who came very near the truth, without fully grasping it, remarks (*Midwifery*, chap. xiv., sec. ix.), in surprise at the rarity of craniotomy in head-last labors complicated with disproportion, "But it will be scarcely believed how seldom this operation is necessary under these circumstances, if we have not been in a hurry, but have acted with prudence."

I cheerfully admit with Dr. W. that "it is *possible* for women to be delivered unaided at full term with pelves of 3 or —3 inches," but it is highly *improbable*. Hodge says (*Obstetrics*, p. 400), "Such cases are of very rare occurrence. Few accoucheurs have been permitted to see them." There are a few stock cases of spontaneous delivery in narrow pelves, but they are so exceptional as to be worn thread-bare by obstetric authors, and as Meigs observes of them (*Midwifery*, 1852, p. 568), "The exceptions but prove the rule" of their impracticability. As an argument against version these examples are worthless, for no practitioner is justified, on their account, to see whether nature is equal to the occasion. It is the opinion of Hodge (p. 400), that, "If the pelvis has not at least three and a half inches in its sacro-pubic diameter, a child fully developed will seldom be delivered alive by the spontaneous efforts of the mother."

But, argues my critic, if nature can deliver in very narrow pelves, *a fortiori* can nature plus the forceps. This is a fallacy, for, on the contrary, the fact of remarkable natural deliveries through very narrow pelves only strengthens my position, for

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it shows that the head, under these exceptional circumstances, untrammelled by the steel blades of the forceps, will so mould itself to the configuration of the brim, as to pass through pelves, through which the forceps could never drag it. By version there is added to this free moulding a tractive power fully equal to that of the forceps. But the forceps interferes with the process of moulding. So impressed are many physicians with this defect of this instrument, that they advise its use merely as a tractor, and not as a compressor, hoping thereby to "wire-draw" or "mould" the head. But they overlook the fact, that, in "wire-drawing," the pincers which seize the wire do not pass through the graduated openings through which the wire is dragged. After version the tractive power is applied, as in wire-drawing, outside of the opening through which the head is to pass and to which it is to be moulded.

For these reasons Cazeaux argues thus (*Midwifery*, ed. 1866, p. 819): "Certain practitioners, having observed that the head became gradually moulded to the shape and dimensions of the pelvic cavity, by the efforts of the womb alone, in some cases in which the pelvis was contracted to less than three inches, have therefore imagined that the resources of art could accomplish what nature alone sometimes effects; that by the forceps a similar reduction in the diameters of the head might be obtained; and, consequently, that the instrument could be usefully applied when the contracted diameters are even less than three inches. But they have instituted a comparison between two forces that are wholly dissimilar. Indeed, there can be no doubt that the expulsory efforts of the womb have succeeded in forcing the head through the pelvis where the smallest diameter did not exceed two and three-quarter inches; but this result was only effected after a tedious labor of thirty, or forty, or even sixty hours; and where the slow and gradual compression, to which the head was then subjected, has enabled the brain to accommodate itself thereto by degrees. . . . . But where the pelvic diameters exceed three inches, the forceps may prove very useful; though I am induced to believe that the character of its action has been misunderstood, by supposing that it is to serve both as an instrument of traction, and as one calculated to reduce the dimensions of the head. Let it be understood that the forceps merely act here as an instrument of traction." Chailly-Honoré (*Traité Pratique*, Paris, 1867, p. 643), another of Dr. Wilson's authorities, states, in almost identical language, that because nature can sometimes, by a slow process of moulding, successfully deliver in pelves under nine centimetres (3.54 inches), it by no means follows that the forceps can. To this opinion Gardien also inclines (*Traité d'Accouchements*, vol. ii., p. 505).

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Having disposed of this argument, let me turn to another. "As for the child," contends my critic, "in pelves of +3 and 3.5, the result should generally be favorable; the forceps should never injure the child or mother."

He further quotes Hodge as saying that "delivery can be accomplished with safety to both mother and child, in the great majority of cases, where the pelvis measures 3 inches and +3."

And also contends that "If the mother fails in her efforts, with a pelvis of +3, the case is easily and safely within the control of a master with forceps." Again, that by the forceps he has seen the biparietal diameter "reduced ten lines without injury to the child." By what facts are these assertions substantiated? Simply by very rare exceptions to the general rule in so far as a three-inch pelvis is concerned. Among them he cites *one* case of Hodge's, and *one* of his own (Mrs. McN.), in which he does not give the weight of the child, nor the dimensions of its head. Let me read what Hodge says about his case (*Obstetrics*, p. 252), "In one case of contracted pelvis, where the sacro-pubic diameter measured *but little, if any more* than three inches, the author delivered an infant alive, whose head, a few hours after delivery, measured three inches and ten lines in its transverse diameter." It was, as the language plainly shows, his *only* case. At page 402, Hodge describes, what he calls, "a very remarkable case," one in which, after "less than two hours'" traction, he delivered a living child through a conjugate "not more than three and a quarter inches." Would Hodge speak of this as "a remarkable case" were a successful delivery in so narrow a pelvis as 3.25 inches, the ordinary and easy result with the forceps that Dr. W. would lead us to infer? Once more, Hodge did not apply his forceps to the sides of the child's head when at the brim of a contracted pelvis.

We all know that Dr. W. is a great advocate for the application of the forceps to the sides of the child's head, and in this he has our hearty concurrence. But when he asserts that Hodge advises, "that with a pelvis of three inches in the antero-posterior diameter, the forceps should be applied to the sides of the child's head," that Meigs "taught and practised the feasibility of applying the forceps to the sides of the child's head at the brim of the pelvis," and that "Denman, Dubois, Chailly Honoré, Baudelocque, Velpeau, and many others, have taught and asserted the practicability and success of the mode of using the forceps," I must call his accuracy in question. In cases of narrow pelves, Hodge says (p. 401), "that the blades of the forceps cannot be applied over the sides of the head in all those cases where it is situated transversely, or somewhat

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obliquely at the superior strait," but can only be in those "exceedingly rare" "third or sixth positions," viz., occiput toward the pubes or the sacrum. He therefore sanctions the application of the blades to the occiput and forehead; but advises as a much better one the *oblique* (fronto-mastoid) application. So far from Dr. Meigs teaching this bilateral application at the brim, he prints for greater emphasis, in leaded type (*Obstetrics*, chap. xv.): "A man shall hardly be justified who inserts his forceps within the os uteri. He must wait until the circle has risen above the parietal protuberance, and can no more be felt." With such a rule of guidance, Meigs could not have made many applications at the brim. In transverse cranial positions below the brim, he sanctions the application to the sides of the head. But in similar positions of the brim in narrow pelves, he thus condemns it: "It would be *preposterous* fo him to think of adjusting the blades upon the sides of the head in that direction. The pelvis (one of three inches) is, perhaps, fatally small. To apply the blades of the forceps, then, would be considerably to increase the necessity for the reduction of the transverse diameter of the head. *Common sense*, therefore, would teach him that if he must apply the additional force, it must be applied to the face and occiput of the child."

Again, he adds (chap. xiv.), referring to English practitioners, "I cannot but indulge a disposition to dissent from this almost invariable habit of adjusting the blades to the sides of the head, much preferring the practice of the Continental physicians, and of those of the United States, who seize the head upon the sides of the pelvis—a practice as to the safety of which I confidently speak, from multiplied opportunities in my clinical experience." Great are the changes which have taken place since Meigs wrote his book. Hamlet and Laertes have exchanged weapons, and we of this city are flourishing our cephalic application of the forceps, in the face of the English pelvic application.

So far from Chailly-Honoré applying the forceps to the sides of the child's head at the brim, he declares (*Paris*, 1867, p. 618) that in transverse cranial positions, in the majority of cases, such an application cannot be made even below the brim. Whilst, when the head is engaged in the superior strait, the bilateral application can be made only in those "very rare" positions in which the occiput or the forehead lies directly behind the pubes (p. 627). He, therefore, teaches the "German method," viz., to the sides of the pelvis, without reference to the position of the head. Hence, he observes, in oblique positions of the head at the brim, the head will be caught in the fronto-mastoid diameter; and in the transverse, over the fore-

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head and occiput. Denman, it is true (*Aphorisms*, 1815, pp. 11, 12), taught that "the forceps should always be applied over the ears of the child; it must therefore be improper to apply them when we cannot feel an ear." He then goes on to explain that the ear must be felt "by a common examination" with the index finger. He, further, applied them when "the head should have rested for six hours, as low as the perineum, that is, in a situation which would allow of their application" (*Midwifery*, chap. xi., sect. vi.). This advice, of course, excludes Denman's application of the forceps to the sides of the child's head at the brim. Velpeau (*Traité Complet des Accouch.*, Paris, 1835, vol. ii., p. 873) declares that in transverse cranial positions at the brim, "which are often met with, I do not see how we can avoid following the rules of the German accoucheurs," viz., the application over the forehead and occiput. Dubois and Baudelocque did apply the forceps to the sides of the head at the brim. So did Joseph Warrington, another author referred to. But he deemed this operation so hazardous a one as not to be undertaken except by only the skilled physician. In his "Obstetric Catechism" are to be found the following questions and answers: "Is it warrantable, in any case, to introduce the forceps before the head has cleared the os? Prof. Meigs, who is high authority, says it is not. Suppose the head becomes arrested at the superior strait . . . . would you turn or apply the forceps? Turning would be safer, unless the practitioner have much experience in the use of the forceps." With two such rules of guidance, few physicians would venture even to apply the forceps at the brim, much less to the sides of the child's head. Thus, out of eight authors, cited by my reviewer as applying the forceps to the sides of the child's head in transverse cranial positions at the brim, only three of them taught this mode of application, the rest did not. Of these three, one only, Dubois, gives any statistics. To these I shall refer before long. Now, it is bad enough for Dr. Wilson to rest the progress of obstetrics upon authors who are nearly all of them obsolete or obsolescent, without misstating what their practice was.

At this stage of our discussion, it may be interesting to note the behavior of two "masters with the forceps," when they were confronted, the one with a pelvis of three inches, the other with a pelvis supposed for many hours to be of the same size. Dr. Joseph Warrington informs us (*Obstetric Catechism*, p. 297, also *Hodge's Obstetrics*, p. 272) that he had a case of labor in "a contracted pelvis measuring three inches in the antero-posterior diameter." My hearers, who have heard from Dr. Wilson, that "delivery can be accomplished with safety to

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both mother and child, in the great majority of cases, where the pelvis measures 3 inches and +3," will of course conclude that Dr. Warrington, unaided, delivered his patient of a living child. Not so. But he at least delivered her of a dead child. Not even that. After repeated ineffectual trials with the forceps, he very properly sent a messenger after Dr. Hodge, who reports the case as follows: "These instruments were re-applied, and again appeared to be insufficient. Dr. Warrington opened the head and applied the forceps. The author then grasped the instruments firmly, and secured them by a fillet. The instrument was not sufficiently powerful immediately to effect our purpose. Fortunately, however, by continued pressure the left parietal bone collapsed, when delivery was safely and easily accomplished."

Let us now see how several other masters with the forceps behaved, when a pelvis was supposed for thirty hours to be "not at the most three inches in the antero-posterior diameter" (*Meigs*, p. 570). Dr. Fox, the attending physician, called in Dr. James, Professor of Midwifery. Then, "on account of the unusual interest of the case, Drs. Meigs and Lukens were invited to attend." But still the case looked so unpromising that "Dr. Physick was called on, but was confined to the house by sickness. Dr. Dewees was also called for, but was absent from the city." Dr. Hewson was therefore "added to the consultation," making five prominent physicians who met over a pelvis with the supposed diameter of three inches. It does not appear that any one of them tried to apply the forceps. At noon of the next day, they discovered the pelvis to be smaller than they had at first imagined, and then proceeded to a very difficult operation of embryulcia.

We are now told that "Siebold, Osiander, Velpeau, Baudelocque, Leishman, Meigs, Denman, and Hodge" contend, that "by the natural efforts of the mother and by the careful interrupted compression of the forceps," a reduction of the biparietal diameter may be gained, variously rated by these authors at from four lines to nearly an inch. Now I cannot find that either Meigs or Leishman considered the forceps as a compressing instrument. The former (p. 542) quotes Baudelocque's well known experiment, in which, after lashing the handles and spoiling three fine instruments, he barely got over four lines of reduction, and argues from them that "they ought to suffice for removing any lingering disposition we might have to regard the forceps as a compressing instrument." Leishman (*Midwifery*, Glasgow, 1873, p. 528) observes that the pressure necessary to keep the instrument from slipping, "will effect all the compression which is desirable."

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With regard to Denamn's "nearly one inch," of reduction *by the forceps*, I should like to have the reference to this quotation. In hurriedly glancing through Denman's book, for I had no time to do more, I did not find this "inch," but I did the following inch. He delivered (*Midwifery*, chap. xi., sect. i.) a woman with a very narrow pelvis twice with instruments, evidently meaning from the context, craniotomy. In five more labors she was delivered by other physicians of dead children. In her eighth labor Denman, being again called in, delivered her by version of a living child, although, as he relates it, "on the left parietal bone there was a depression of considerable extent, and to my apprehension of full one inch in depth, occasioned by the projection of the sacrum." Perhaps this is the "inch" referred to, and my critic has got it misplaced.

But, granting that Siebold, Velpeau, and others could reduce the bi-parietal diameter when the blades were accurately adjusted to the sides of the head; what advantage did this give to those of them who in a narrow pelvis applied the blades to the occipito-frontal diameter? Far from being a help, this very compressing power of the forceps, thus applied, must necessarily increase the bulk of the offending bi-parietal diameter. Recognizing this mechanical disadvantage, Meigs, Cazeaux, Chailly-Honoré, Leishman and others use this instrument simply as a tractor,—making the pelvis the compressor, and not the forceps. With regard to the reduction of the bi-parietal diameter by the forceps when applied to the sides of the head, I demonstrated, in a previous discussion, that it could not compete with that made by version. For when the forceps is thus applied, in a transverse cranial position at the brim of a narrow pelvis, the virtual reduction of the bi-parietal diameter is vitiated by that made by the pubic blade, which is wholly unnecessary, and in fact thrown away as so much lost power, because it is the sacral side of the head which alone needs moulding.

We are now informed that Hodge, Dewees, Meigs, and Churchill cite cases of "successful delivery" by the forceps in "pelves of 2.75 inches." They cite, it is true, a few very rare and, therefore, the stock cases of obstetricians, but offer none of their own that I can find. What they themselves thought about the feasibility of applying the forceps in narrow pelves, I will show by a few extracts. Churchill (Philada., 1855, p. 351) asserts, that "in distortion of the pelvis, when the antero-posterior diameter of the brim is less than three inches, we have no chance of delivery by the natural efforts or by the forceps; so that to save the mother we must destroy the child." Again (p. 270), "it is clear, then, that unless there be a space of full

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three inches, it would be useless, probably injurious, to use the forceps." Dewees (*Midwifery*, par. 790) says, "It would seem, then, from all experience, to follow, that from a pelvis with less than three inches, *or even three inches and a half* in its small diameter, a child's head at full time cannot be made to pass with safety by means of the forceps, unless there be an unusual degree of suppleness in the bones of the cranium, or the head itself unusually small." Again, "but when (par. 1547 with foot-note) the small diameter of the superior strait has less than 3.25 inches, these instruments cannot be employed at the full period of utero-gestation with any chance of success." He also observes (par. 833) that, "when necessity obliges us to deliver when the head is situated at the superior strait, it is much better to have recourse to the doubtful but safer alternative of turning, for it will rarely happen that this cannot be performed while the head remains free above the superior strait, even when the pelvis may be a little contracted, with at least as much safety to the child, and certainly more to the mother." Meigs (Philada., 1852, p. 567) avers that "indeed, if the pelvis have three inches of antero-posterior diameter, it (the child) cannot be born alive, unless it be uncommonly small, and moreover possessed of a very incomplete ossification of the cranial bones, and great laxity of the suture lines that unite them."

Dr. Wilson next informs us that "Baudelocque recommends the forceps in pelves of 2.5 inches and upwards, both for the safety of the mother and child." Also, that "Chailly-Honoré advises their use in pelves of 2.5 inches." Again must I challenge the accuracy of my reviewer. Baudelocque (*Traité des Accouchements*, par. 1972) writes thus: "This instrument is sometimes dangerous to the child when the pelvis has only three inches in the small diameter, and much more dangerous, if not murderous (*meurtrier*), when that diameter is still farther contracted; while it destroys the child it also exposes the mother to lesions more or less grave. The forceps are in no way proper, when the small diameter of the pelvis is not 2.5 inches." Again he writes (par. 1789), while on the subject of the use of the forceps in narrow pelves, "I shall suppose in all these cases that the length of the smallest diameter of the superior strait is less than 3.50, and more than 2.75 inches." Dewees, commenting upon this great Frenchman's work (*Midwifery*, par. 1547, *and foot-note*), says that "it must be borne in mind, that the French inch is one line, or one-twelfth of an inch larger than the English inch"; consequently 2.5, 2.75 and 3.5 French inches are nearly equal to 2.75, 3 and 3.8 English inches. In paragraph 1629, Baudelocque asserts that the use

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of the forceps is dangerous to the child "when the conjugate is three (3.25 English) inches in length"; and (par. 1633) states that he applied them but twenty times at the superior strait, and implies that his luck in saving the children was not great.

Chailly-Honoré, so far from advising the use of the forceps "in pelves of 2.5 inches," informs us that (ed. 1867, p. 642) he once extracted a *small* girl through a conjugate under eight centimetres (3.14 inches), "but such observations, which are extremely rare, only prove the infinite resources of nature, and ought in no wise to give support to those who advise us to attempt to extract with the forceps the head of a mature child in a pelvis under eight centimetres." He further considers the application of the forceps in pelves under nine centimetres (3.54 inches) as death to the child, very dangerous to the mother's life, and, in the majority of cases, useless. Again, in an argument against version, he says (p. 649): "This instrument will frequently extract a living child (through a conjugate of) over nine centimetres (3.54 inches), sometimes, indeed—although this is very rare—under this size." He also mentions (p. 643) a very grave complication in the application of the forceps above the superior strait, viz., the prolapse of the cord. "Statistics show," he adds, "that out of five applications of the forceps above the superior strait, no fewer than two are complicated by a prolapse of the cord. I have met with it in the ratio of twice in three cases."

We are now informed that "Cazeaux recommends the forceps for delivery in pelves of 2.75 and three inches, saying that version may be resorted to in pelves of 3.75 inches, differing with Simpson, Madame Lachapelle, and Radford, who say that version should be made in narrowed pelves when the child presents favorably and the narrowing is less than 3.5 or 3⅓; and he further instructs us that it is an especial condition for version that there be no disproportion between the size of the child's head and the walls of the woman's pelvis." Again, that "Leishman very positively declares that with a pelvis of 3 or —3 inches version should never be attempted. Cazeaux and others confirm this statement."

Now Leishman (*Midwifery*, Glasgow, p. 569) objects to turning only "when, in round numbers, the conjugate diameter is *less* than *three inches*." In his résumé of the subject he says: "The following may be given as showing, according to the most approved authorities, the degree of conjugate contraction at the brim, which may be supposed, under ordinary circumstances, to indicate the various operations which have been described:

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Long forceps,	4	to 3.25 inches.
Turning,	3.5	to 2.75 "
Craniotomy,	3	to 1.5 "
Cæsarean section,	1.5	and under."

You have just heard what my reviewer makes Cazeaux say. Let us see what he actually now does say. "The ultimate limit to which we restricted the use of the forceps (*Midwifery*, 1866, p. 819) was three inches; because any reduction we could hope to obtain in the diameters of the head beyond that would not, as a general thing, be great enough to permit it to pass through the contracted diameter of the pelvis." "An attentive examination of this question (version in narrow pelves) has convinced me that Madame Lachapelle, Dr. Simpson, of Edinburgh, and Mr. Radford, of Manchester, were right in preferring pelvic version to the application of the forceps in some cases;" p. 776. Again (p. 823): "If, after several fruitless attempts made with the forceps upon a favorably situated head, the heart is heard to beat distinctly and regularly, we should, if the pelvis has at least 2.75 inches, attempt the pelvic version before resorting to craniotomy." Further (p. 584), "If moderate tractions are found to be insufficient, the instrument should be withdrawn, and pelvic version attempted, in the hope of extracting a living child."

But it is contended that version is also a painful and dangerous operation to the mother, proving fatal to her in the ratio of 1 to 10½ (Cazeaux), or 1 in 14 (Churchill). In these days of anæsthetics the "painful" argument against version seems to me to be a very weak one. But let that pass. Turn now to Cazeaux. He, it is true (p. 788), quotes the version-statistics of Riecke, who makes the ratio of maternal deaths 1 in 10.4. But he qualifies them by "considering the accidents which necessitated this operation," and terms it "an easy operation and but slightly hazardous, either to the mother or the fœtus, . . . when performed under favorable circumstances." Again, he says (p. 772), "We are, at present, convinced that the dangers of pelvic version in cases of contracted pelves have been much exaggerated." With regard to Churchill's ratio of 1 in 14, my critic again fails in accuracy. Churchill, who is a bitter opponent to version, gives (*Midwifery*, Philadelphia, 1855, p. 292) the ratio of maternal deaths from version as one in sixteen. But if we are to be deterred from turning because Churchill makes the death-rate 1 in 16, *a fortiori* ought we to give up the use of the forceps, for (p. 321) he gives one in fifteen as the maternal death-rate after forceps deliveries. Yes, gentlemen, according to a writer, quoted by my critic as

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an authority on this point, in spite of the performance of version for accidental and unavoidable hemorrhages, for narrow pelves, for every conceivable grave puerperal emergency or complication, it is less fatal to the mother than is the use of the forceps. Excluding the emergencies and complications of labor, version in narrow pelves thus becomes by far the least fatal of all obstetric operations. Excluding the emergencies and complications of labor for which the forceps is very rarely used, and limiting it to cases of disproportion and of narrow pelves, it becomes a very fatal instrument, fully justifying Baudelocque's celebrated remark that it "has been more injurious than useful to society." On the other hand, Schroeder (p. 185) asserts that "The prognosis of extraction by the feet is decidedly favorable to the mother. All the various steps of the operation are devoid of danger to her." And so they are when the operation is one of election, as in turning in narrow pelves; and not one of compulsion, as in the hemorrhages, transverse presentations, etc., of labor.

I come now to a very important question, one on which much hinges. Is it a fact that those of my tabulated cases with conjugates ranging from +3 to 3.5 inches, exhibit "but a slight defect," a defect which can be readily overcome by the forceps? Is it true, that, asurged by Dr. W., "if the mother fails in her efforts with a pelvis of +3, the case is *easily* and *safely* within the control of a master with forceps"? Is it true that with the forceps, "delivery can be accomplished with safety to both mother and child in the great majority of cases, where the pelvis measures 3 inches and +3"? Out of the seven thousand cases which Dr. W. supervised at the Philadelphia Lying-in Charity, he offers but one case of successful delivery through a three-inch pelvis—that of Mrs. McN——, and in this single case he has not given the weight of the child or the diameters of its head—a negligence for which under similar circumstances he takes Schroeder to task. Now, although he twice delivered this woman of living children, and although she once delivered herself of a living child, I shall not be so discourteous as to cast the same doubt on the accuracy of his measurements in this case, as he has on mine, in one of my cases (Case IX.), which he could not otherwise dispose of. I shall, therefore, not retort his language by styling this conjugate as one "said to be" three inches, but shall accept this diameter as accurately determined. Yet, is the whole question of treating labor in narrow pelves to be settled by this single example out of seven thousand cases? Is science to hinge on it? Besides, out of these seven thousand cases, he has given us none of his failures, and no statistics of his craniotomy

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cases, or of the fœtal mortality. Can he affirm that he has "easily and safely" delivered all his cases with pelves ranging from +3 to 3.5 inches?

One word in this connection on another point: Dr. Wilson states that in this Charity "The mortality to the mothers was less than half of one per cent. in a table of nearly seven thousand cases." Now, I do not for one moment question his veracity or that of the other eminent gentlemen connected with this noble charity. But, as was well shown in the long debate on hospitalism, in the Dublin Obstetrical Society, the statistics of all maternities, where women are delivered at their own houses by students or by recent graduates, are, for many reasons, wholly untrustworthy. For instance, according to one annual report of the Philadelphia Lying-in Charity, 293 poor women were attended in their confinement, and it is added that "during four years 1,253 obstetric patients have been registered on the books of the Charity, all of whom have recovered." By a strange coincidence, during that very year, I was applied to by two pregnant women to send physicians to attend them at their homes. I referred them to this maternity, but they absolutely refused to apply there, on the ground that each one during that year, had lost a near relative, who had been attended in her confinement by some student of this Charity. Post-partum hemorrhage was the cause of one of these deaths.

But to return from a digression, Meigs' typical illustration of a case of locked head (p. 558), in which the child dies, the soft parts slough, the womb and vagina are lacerated, fistulæ form, and the mother perishes, is in "a pelvis only three and a half inches in its antero-posterior diameter." Hodge's "remarkable case" of forceps delivery, which has already been cited, took place in a pelvis measuring 3.25 inches. A great misconception exists in regard to contracted pelves. The difference between the circumference of the head of the boy and that of the head of the girl averages only three-eighths of an inch—a difference which may be represented, according to A. R. Simpson (*Edinb. Med. Journal*, Dec. 1870, p. 490), by the thickness of a single fold of a table-napkin wrapped around the head. Yet so nicely adjusted is the size of the fœtal head to the calibre of the pelvic canal, that this slight difference is enough to make the birth of the male child more than twice as fatal to the mother as the birth of the female child, and to cause the large average of one hundred and sixty male still-births, to one hundred female (*New York Medical Record*, June, 1873, p. 302). Hence, as Meigs shows, "If the child's head is 3.8 inches in its smallest diameter (and this he deems the average size), the dried pelvis ought to be more than four inches in its smallest

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diameter, in order to allow for it a free transit." Thus, a standard head in a pelvis measuring 3.75 inches, constitutes a difficult labor. According to Cazeaux and Dubois (p. 582), "a spontaneous delivery is possible under such circumstances," but the forceps will usually be needed. Barnes (*Obstetrical Operations*, London, 1871, p. 235) writes, "I claim to speak with the confidence drawn from large experience, when I say that a head of standard proportions and firmness will hardly ever pass a conjugate reduced to 3.25 inches without the forceps, and very rarely indeed with the forceps—that is, alive. I might even extend the conjugate to 3.50 and affirm the same thing." Schroeder quotes (*Obstetrics*, New York, 1873, p. 234) Michælis approvingly, who contends that "a pelvis is contracted when its conjugate measures less than 3.7 inches." Further, he states that "This, however, by no means gives a complete definition of a contracted pelvis, for numerous very serious disturbances during parturition may occur, as Michælis himself admits, in the generally contracted pelvis with a conjugate of somewhat more than 3.7 inches."

Let us now see whether in pelves of 3 to 3.50 inches craniotomy is not only often necessary, but frequently a very difficult operation. There is probably not a gentleman in this room who has not seen one such case or more. The medical journals are full of them, but I shall cite only three, and those from the practice of J. Braxton Hicks (*London Obstet. Trans.*, vol. vi., p. 203), one of the best of British accoucheurs. Turning was not resorted to, because either the child was dead or the womb too contracted. Case II.—"The brim was probably a little over three inches in its antero-posterior diameter." "First child born dead after a most lingering labor; second delivered alive by forceps after severe traction, with some laceration to os uteri." In her third labor, Dr. Hicks was called in after she had been in labor thirty hours. He waited twelve hours longer, and finding no improvement, applied forceps, but could not deliver "by legitimate pulling." Craniotomy was therefore performed, but he had "great difficulty in drawing down the head by the craniotomy forceps and crotchet." Case IV.—"Probably antero-posterior of brim was about three and one-quarter inches." "Two attempts to deliver by forceps failed." Perforation with traction being of no use, the greater part of calvarium had to be removed. Case VI.—Had "a brim of not much over three inches in its conjugate diameter." Delivered in first labor "by perforation, after the trial of long forceps, with much difficulty;" in second labor with forceps. In third pregnancy, the induction of labor was advised by Dr. H., but rejected by his patient. He

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"found the forceps useless, even using them to the limits of safety." He therefore perforated, evacuated brain, fractured bones, pulled with craniotomy forceps and crotchet; and yet could not deliver until he had hooked down the face.

Turn now to W. H. Jones (*Management of Labor in Contracted Pelves*), who gives the statistics of fifty-one cases of deformed pelves observed by him in the hospital of *La Clinique d'Accouchements*, in Paris, under the service of the celebrated Paul Dubois, who applied the forceps to the sides of the child's head, and is cited as an authority by Dr. Wilson.

Of antero-posterior diameters *above* 3.5 inches there were sixteen cases, exclusive of one of "narrowing at inferior strait." Of these, six were delivered spontaneously, two of them being breech presentations; all the mothers recovered, one child was lost. The forceps were successful six times, with two maternal and one fœtal death. Craniotomy or cephalotripsy was performed four times, with two maternal deaths. One of the cases of cephalotripsy was after version in a transverse position; for Dubois, who deemed, as my critic avers, traction on the legs "more hurtful than beneficial," and did not know the method of propulsion, had to resort to the cephalotribe. The average length of labor was thirty-three hours; average weight of children six pounds and ten ounces. Just think of it, gentlemen; out of thirteen vertex presentations in pelves over 3.5 and under 3.75 inches, treated by "a master with forceps," such as Dubois was, and with the blades adjusted to the sides of the head, there were three cases of craniotomy or of cephalotripsy!

Of antero-posterior diameters between 3.5 and 3 inches there were fifteen cases. Two ended spontaneously; mother and children did well. One ended spontaneously after the induction of premature labor; mother and child did well. In *two* cases the forceps were successful; mothers saved; one child died. There were three transverse presentations; turning was performed in two of them. The mothers lived; one child died. In the third, spontaneous version and delivery took place, the child, of course, being dead. *Seven* times recourse was had to the cephalotribe, with the death of one mother. The average weight of the children was *five pounds and seven ounces.*

Do not these figures speak for themselves, and utterly disprove the assertion of Dr. Wilson, that "if the mother fails in her efforts with a pelvis of +3, the case is *easily* and *safely* within the control of a master with forceps"? These labors were presided over by the foremost obstetrician of his age, and "a master with forceps;" the children's average weight was

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only *five pounds and seven ounces*,—a weight " in which,' according to Dr. W., " by the authority of Ritgen and Stoltz the bi-parietal diameter was estimated at less than three inches," —and yet there were *seven* cephalotribe operations out of *ten* presentations at term of the vertex, and one of the face. Since reading my paper, I have, by turning, again delivered Case V. of a fine living child; this time weighing eight pounds and four ounces. In view of the foregoing facts, I feel fully justified in asserting, that in spite of the adverse criticism passed on them by my reviewer, my tabulated cases show a far better record both to mother and child, than if version had not been resorted to.

To my description of the mechanism of labor in narrow pelves, he replies by referring once to Leishman, and twice " to Meigs and Hodge in proof that the head in vertex presentations, with 3 or +3, does dip, and the vertex does enter the brim." Leishman makes such an assertion, but it is only an assertion, and he does not discuss it. While, since those two other excellent teachers wrote, the art and science of obstetrics has made great strides. Besides, when compared with European obstetricians, they had but a limited experience in pelvic deformities. Now, I did not contend that the head does not finally dip, when nature is equal to the task; but I showed that it " does not *tend* to dip," and that usually the fore-cone of the head dips first and becomes engaged before the hind-cone, when the narrowing is mainly limited to the conjugate diameter. On the other hand, I state in my paper, that when the pelvis is uniformly contracted, the head enters the brim strongly flexed. If my critic will study the subject of pelvic deformities under the guidance of more modern and more experienced teachers, he will find that there is more than one kind of pelvic deformity, and that these distinctions are important ones. If the head always dips in narrow pelves, what explanation can be offered for the fact that the anterior fontanelle is so commonly found to be either on the same plane or on a lower one than the posterior fontanelle? How interpret the frequency of face-presentations in narrow pelves? Or how, that peculiar rocking or pivot-motion of the head so happily described by our excellent President at a previous discussion. Again, if, as Dr. W. asserts, " The first process in the mechanism of labor is the increased flexion of the head, caused by the resistance offered by the neck and os," how is the head to flex when it cannot descend low enough to bear upon the cervix? Further, what does Dr. W. mean, when he says that " in some cases, where the contraction is great, the head rests upon the brim, and does not press upon the os, which may become soft and yielding, but

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does not dilate"? Does this mean dipping? Of course, if in such cases nature is equal to the delivery, the vertex must ultimately dip, but it does so usually after passing through the mechanism previously described. And if the physician should wait for the head to dip, before applying the forceps, he would often have to wait until doomsday.

The objection next made is that version means a rapid delivery, and we are warned of "profound fainting fits, followed by hemorrhage, difficult to control, and even fatal in result," that are likely to happen after "rapid deliveries." Now, Cazeaux (p. 530) and with him all obstetric authors define "a rapid labor" as one in which the woman is "delivered with only a few pains." But why is version resorted to in narrow pelves? Because the woman has been long in labor, with perhaps violent expulsive pains, and cannot deliver herself; because the forceps have been tried in vain. Does this comport with the definition of "a rapid delivery"? On the other hand, I maintain that version empties the womb more equably and less rapidly than the forceps. For by the former, after the slow extrusion of the half-breech and body, the womb is rapidly emptied of only the relatively small head. By the forceps, the head passes the conjugate with a jerk, and is soon born, while the next pain after its birth quickly empties the womb of the more bulky body. No fears of "profound fainting fits followed by hemorrhage" need, therefore, deter us from turning.

The tensile strength of the child's neck is the next point in my paper which arouses all of my reviewer's powers of sarcasm. To disprove the wonderful strength of the child's neck, he advances his own disbelief, a quotation from Meigs, and the alleged adverse opinion of Cazeaux, Dubois and Desormeaux. Now with regard to Meigs' assertion (*Obstetrics*, p. 404), "that the infant will not safely bear a more violent pull by the neck [in pelvic presentations], than it would if dressed and lying in its mother's arms;" this picture is certainly a heartrending one to the laity, and in a case of alleged malpraxis might have its weight with the average jury. But I do not think that either Drs. Meigs or Wilson would be willing to squeeze a head with the forceps as viciously after the child is "dressed and lying in its mother's arms," as they did to effect its birth. Neither would they be willing to make as much traction on its lower jaw, as they may have been compelled to make before it was born. I prefer facts to sentiment, and the facts are that, unless the neck be twisted, it will stand a wonderful amount of traction. Meigs himself (p. 578) in describing a difficult craniotomy case remarks that "I got a firm hold of

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the neck, and with the exertion of the *greatest strength* gradually got the button-like remainder of the head out of the vulva." Dr. R. Stewart, in one of the discussions on my paper, stated that after breaking up the head in a narrow pelvis, the shoulders refused to pass. He, therefore, twisted around the neck of the fœtus a long towel, which was pulled upon by two physicians "*with all their might*," before the body was delivered. Yet, in spite of this enormous traction, certainly over two hundred pounds, the neck was unbroken. In my paper I gave a crucial example of the strength of the child's neck, and also my reasons for believing that a living child's neck will resist greater traction than that of a dead one. But it may be retorted that such traction is not compatible with life. Granted, in so far as the traction of two stalwart men is concerned. But I have successfully put as much weight upon the legs of a child as I have on the forceps-handles—a weight, as I believe, of fully one hundred and thirty pounds. Barnes, who has had the large experience of over three hundred cases of version, tells us (*Obstetric Operations*, chap. xvi.) as the result of many successful deliveries, that "Surely no one can doubt that the traction-power, and, therefore, the compressing power, acquired by pulling on the legs and trunk, is greater than can be exerted by the strongest forceps." The harrowing scenes at the scaffold, when the rope snaps, or the prolonged struggles, when the neck is unbroken, show conclusively that no amount of traction *per se* —traction without twisting—will destroy life unless the spinal column yields. Now M. Duncan has shown, that, after the neck of an infant has been broken, it takes from fifteen to twenty pounds more before the head parts from the body. Accepting these data, the conclusion is logical that a living child may be born if the tractive power has not reached to within fifteen or twenty pounds of the decapitating limit. But what stronger proof of the viable resistance of the child's neck to traction can be adduced, than that unconsciously offered by my critic himself in the following very apposite quotation from Hodge: "It would be very easy, from the records of the profession, to detail the horrible results of forcible traction upon the limbs and body of the child, when such traction was made not at the proper time, or in the proper direction,—when brute force has been substituted for art and science. Perhaps there are but few practitioners who have not seen or heard of cases where the *strength of two individuals* has been applied to the body of the child, while that of three or four, or even more, attendants to the body of the mother to accomplish the delivery of the head after the body has been born. *That the child should ever escape with its life* under such circumstances is surprising."

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Six and even more persons pulling away at mother and child, and yet, as Hodge clearly implies, the child has escaped with its life! When compared with this enormous amount of traction, what is the weight of one hundred, or even of one hundred and thirty pounds, which I have on several occasions *successfully* put on the necks of children, but which Dr. W. "cannot be persuaded to believe." We are told in this relation, that "Cazeaux says that traction upon the child's neck, when there is a great obstacle to its birth, is fatal," and that "Dubois and Desormeaux say that traction upon the child's neck is more hurtful than beneficial." Cazeaux, as I have shown, does not deem a conjugate of 2.75 inches as an objection to version made with the object of saving the child's life. As for Dubois and Desormeaux, Cazeaux (p. 772), from whom Dr. W. gains this information, makes them, it is true, object to traction; but from a foot-note (p. 454) it will be seen, that Desormeaux there objects simply to pulling on the legs before the arms are delivered. In his brochure (*Précis de Doctrine sur l'Accouchement par les Pieds*), I find not only that he delivers by traction, but that he scorns the idea of uterine inertia and of hemorrhage after version.

The fears entertained by my reviewer about the production by version of lacerations of the perineum into the rectum, and his "always feeling disgraced when it occurs in my (his) practice," convey the impression that he is singularly unlucky in his very creditable efforts to preserve the integrity of this body. But as this is probably a verbal carelessness of expression on his part, I shall treat him more generously than he has treated me, and shall make him say what I believe he intended to say and not what he does say. With regard to this alleged danger of lacerations after version, I have successfully operated in quite a large number of cases of torn perineum, and upon inquiry have found that, save in one instance, they were the results of instrumental delivery. I will venture to say that in nine out of ten cases of rupture into the rectum, the forceps will be found to have been the cause.

This ought not to be so, but it is so, and for a case in point let me cite "Mrs. L.," referred to by Dr. W. She was delivered by forceps "under the care of a distinguished professor of obstetrics in a Western city, assisted by an eminent physician in the place," and yet the "perineum was torn, the rent extending one and a half inches into the rectum." On the other hand, every one must admit that after the vagina and perineum have been stretched open by the half-breech, no great laceration can at the worst be produced by the head. In all my breech—and version—cases, I can recall but one in which the perineum

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was at all torn, and that was a case of version for a face presentation. In cephalic presentations I have, like my reviewer, seen the perineum give way, but I have so constantly cured the rent by the silver sutures, that I should have no misgivings about causing such a lesion were it necessary thereby to save the life of the child. On this very point, W. Tyler Smith has expressed the opinion that "Surely it is better in any case that the perineum should be torn by the fœtal head, or by the forceps, than that a living child should be killed" (*London Obstet. Trans.*, vol. i., p. 29).

With regard to the "contusions of the parts followed by inflammation, sloughing, etc., and resulting in vesico- or recto-vaginal fistulæ, or septicæmia, or even the death of the patient," which my critic lays much stress on, these are mere assumptions. In point of fact the danger of these lesions and accidents is far greater when the forceps is used for one hour or more. Schroeder (p. 185), writing of version, contends that "All the various steps of the operation are devoid of danger to the mother; only when there are disproportions in size between the head and the pelvis are the maternal soft parts compressed by the head passing through them. This pressure, acting once and only for a very short time, is known not to have any bad effect, and, as a whole, extraction is at times more favorable to the mother than delivering with the head presenting." "It is," writes W. H. Jones (loc. cit.), "the *duration* rather than the *intensity* of pressure upon the soft parts, which produces mischief. And I base this assertion upon statistics that have been established by many writers."

But what are the circumstances in my tabulated cases which have aroused this solicitude of my critic for the mother's soft parts? What the reasons he offers for these fears? By incomplete quotations from the history of these cases and by divorcing them from the context, he makes me say what I do not say. For instance, in Case V., I am made to say that "I turned the child and delivered it alive in less than three minutes, etc."—giving the impression that the operation of turning and delivering occupied less than three minutes. What I inculcate is to deliver the breech slowly so as to dilate the parts. What I really do say in this case is that "I delivered it alive in less than three minutes after strong traction and propulsion had been begun;"—that is, after the breech and body had dilated the soft parts and had been delivered, the arms brought down and the head alone remained for delivery. To show that "the neck of the uterus may be injured, for time is not always allowed for dilatation," he makes me say in Case III., "Two fingers of the left hand were then squeezed into the

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os and ultimately a third;" when I afterwards state that "One foot having been dragged down, time was given for the os to dilate before the body and arms were brought down." In Case VIII., he makes me say by quotation marks that "the head *bounced* out of the grip of the brim and the child was born;" when I state that "the head bounced out of the grip of the brim" and "after a short but anxious detention at the cicatricial band, a living and lusty child was born." Finally, he makes me advise, in contracted pelves, that a child should be "pulled out with the arms either over its head or brought down." Now, all the ground for this assertion is the following remark that I made in another paper,—that on "Head-Last Labors:" "That in cases of pelves *known to be ample*, I can *conceive* of its being perfectly justifiable to follow Gifford's and Froriep's plan of dragging the head through with the impacted arm extended above, rather than that of losing golden minutes in liberating it."

Time forbids me to expose other misapprehensions and misstatements on the part of my critic; and also to purge my Cases from partisan interpretation. Suffice it to say, that he has taken the same liberties with them that he has with most of his own authorities. Since he has played such havoc with modern authors—authors in the vernacular—we may well feel thankful that "time fails" him "to discuss the modes resorted to for the delivery of women in the second, fifth, and seventh centuries." The physicians of "the seventeenth century" may also congratulate themselves on their escape.

To sum up, the staple of his argument is, that version cannot be the proper thing, because he twice successfully delivered *one* woman, who also delivered herself through a three-inch pelvis; and because this or that physician said or did so and so—or rather, as I have shown you, did not say or do so and so. But I forget there is one argument kept in reserve, like the imperial guard, as a clincher. It is that the "versionists aim to bring to naught the promise that 'in sorrow thou shalt bring forth children.'" This curse, and the corresponding one on man, are not new arguments. A good deal of respect should be shown to them on account of their age. From time immemorial they have been the stock arguments against all inventions and improvements in the arts and sciences. The one or the other has been advanced against steam, the loom, and all labor-saving machines; against the forceps, and the use of ether in labor, and finally, in the wane of the nineteenth century, by my reviewer against version. So the "versionists," as he contemptuously calls them, do "aim to bring to naught the promise that 'in sorrow thou shalt bring forth children.'" All

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honor to the "versionists" then say I, while I refer my critic to a careful perusal of the pious Simpson's reply to this time-worn and mediæval argument.

In conclusion: Obstetrics is not one of the exact sciences, and in our penury of truth we ought to be accurate in our statements, generous in our doubts, tolerant in our convictions. Without these qualities science cannot be promoted nor truth educed. Above all, as Milton has said, "Truth needs no policies, no stratagems to make her victorious." Surely, then, arguments based upon misstatements and misquotations show a weak cause. But when, in addition, the Book of Genesis is brought into a medical discussion, when the curse pronounced upon Eve is invoked as an argument, and when a grave and a vexed obstetric question is settled by an appeal to Moses and the Prophets, the cause must be a hopeless one.

Dr. Isaac S. Eshleman then read the history of the following

CASE OF VERSION IN A CONTRACTED PELVIS.

Since the beginning of the discussion on Dr. Wm. Goodell's paper I was called to assist Dr. J. J. Maguigan in the delivery of a woman whose pelvis was greatly narrowed in its conjugate diameter. Meeting with difficulties in the case that embarrassed very seriously if they did not wholly preclude the use of the forceps, I felt justified in resorting to version, notwithstanding the very decided objections I have entertained concerning this method of delivery. I will describe the case as treated by a succession of expedients, embracing one that I believe is novel to the profession, in the hope that a scintillation from the humblest source may add to the flood of light now pouring in upon obstetrical surgery. The mother was a well-developed, healthy woman, at full term with her second child. The pelvis was kidney-shaped, but larger on the right than on the left side, with a conjugate diameter of about three inches. The child weighed fully nine pounds. The head lay transversely, with the vertex on the right of the promontory of the sacrum, but looking toward the left. The forceps were applied laterally, but slid from their hold. Examination made with the instruments applied demonstrated that the blades were arrested by the right iliac bone, while the head was large and somewhat extended, so that they simply grasped the back part of the head vertically. The waters having been evacuated for twelve hours, hard labor pains had jammed the head and shoulders in this position. No fœtal life could be detected, yet as sufficient cause could not be assigned for the death of the child, crani-

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otomy was not entertained. It is an alternative to which I have never been driven in my practice. The mother had been delivered, when a primipara, with the forceps, by Dr. Maguigan, of a living child; but the Doctor represents the head as having passed the superior strait without aid, the child being only half the size of the present one, and probably as presenting vertex right to the wider side of the pelvis. After due deliberation we decided to lay aside our usual expedients, and try podalic version, the method of delivery so ably advocated and successfully practised by Dr. Goodell. A mixture of ether and chloroform was administered. In consequence of the early rupture of the membranes, and the child being (as afterwards proved) dead, a foot was with great difficulty brought down to the orifice of the vagina, while the body scarcely changed its position; nor could it be moved until a fillet was applied to the foot, at which Dr. Maguigan made very strong traction, while with one hand in the vagina and the other on the abdomen I exerted a very considerable amount of power upon the head and body, giving the uterus time to dilate in its lateral walls, when version was finally accomplished. Then followed the greatest resistance to the least progress. Labor pains had well nigh ceased, although ergot was freely used. The hips were at length delivered with great difficulty in the hands of Dr. Maguigan. He also succeeded in extricating one arm, both being up. When he became exhausted, in turn I obtained the other arm. We were now well satisfied that we had been laboring with a dead child from the beginning. Turning had brought the vertex to the right, where we wished to engage it.

Applying a towel about the body of the child, I now proceeded to use proper movements to obtain "the leverage." With Dr. Maguigan's quota of pressure upon the vault, I brought the child first down, then forward, and finally back against the perineum, under a traction force of about 100 lbs., with the effect only of severing the cervical vertebræ. This rather surprised me; my first experience in this line—evidently too heroic for the neck of a *dead* child. Pretty well exhausted, and disgusted with what I had done, I resolved next to operate on a theory according to which I practise in head-first labors with the forceps. I therefore asked Dr. M. to elevate well the body, pressing the neck against the pubic bone, while I moulded the head to one side, working the edge of the cranial base laterally under the promontory of the sacrum by external supra-pubic manipulation and pressure. This done, persistent backward and downward pressure, from above, readily extricated the head with less than half the traction power before used in a backward direction, now simply directed in a line with the body.

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Having practised on this theory in narrow conjugate diameters in head-first cases with the forceps successfully, I was induced to try the same, by reversing the rule, in this head-last case without the forceps. It is, I am inclined to believe, upon this principle of canting the base that Dr. Goodell succeeds so well, although he does not represent it as the modus operandi as here explained; nor do I know that any other accoucheur ever so taught or practised. According to this theory, the relative measurements of the child's bi-temporal and the mother's conjugate are ignored. The child's greater bi-temporal and parietal diameters pass geometrically the lesser conjugate without shortening of the cranial base by compression. In a well-formed pelvis, when the forceps are applied and traction made, the handles will show that the head, in either the left or right occipito-anterior position, borders very closely upon the vertex symphysis position. In these instances, the head being flexed, dips the cranial base almost perpendicularly into the pelvic cavity in the line of its *long diameter*. But in the case of an ordinary-sized head, when the conjugate is shortened, or as more frequently occurs in practice with a relatively large, broad head having increased temporal and parietal diameters, when the pelvis is normal, one parietal protuberance is found to lodge on the pubic bridge, while the chin departs and the other parietal protuberance sinks below, is moulded and passes under the promontory of the sacrum, dragging after and dipping or canting the *short diameter* of the cranial base of the same side laterally. If left to nature, and the disproportions of the head and the pelvis are not too great, the head will, under good labor pains, be gradually moulded into a rhomboid, forming a wedge of one side or edge of the cranial base, which dips down, following slowly the cephalic mass, and passes under the promontory of the sacrum far enough to allow the other side to pass the pubic bone. Should the efforts of nature prove insufficient in these cases, the forceps, when applied, may be adapted according to this indication in the fronto-mastoid diameter, in a measure diagonally, with one blade pressing *under* the sacral side of the cranial base, while the other presses *over* the pubic side of the cranial base, compressing the head into a rhomboid and causing the base of the skull to dip laterally in sufficient measure while it passes under the promontory of the sacrum. Now in head-last deliveries with narrow conjugates, where with this lateral dip the cranial base precedes the cephalic mass, possibly this movement of the head may be more readily executed than in head-first cases. If so, version early resorted to in very narrow conjugates may, without much risk to the mother, be the means of saving the life of the child where the forceps would fail.

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Operating on this theory with the forceps, applying one blade behind the sacral, and the other in front of the pubic ear, making the pressure diagonally with the cranial base in the fronto-mastoid diameter, I have always been able to deliver with the forceps, head first, until I encountered the present case; and I am by no means sure that I should not have been successful in this case, by reversing the forceps and adjusting the head, had I not been desirous of trying the head-last method of Dr. Goodell's paper. The mal-position of the child's head, lying as it did entirely on the right side of the pelvis, with the chin departed, might have been corrected by manual effort, just as the head may be restored in a shoulder or arm presentation, the books to the contrary notwithstanding. This I was compelled to do in this case after I had obtained the foot before the child could be turned. The head was restored in the course of the revolution it made as it swept across the pelvis from right to left. This, as done, did not necessitate the effort required to obtain and bring down the feet as in turning; neither did it incur the risk of forcing the long diameter of the child through the short diameter of the uterus. It comprised none of the hazards of turning. At this stage the forceps might have been applied, and delivery effected in either the L.O.A. or the L.O.P. position, or possibly in the R.O.A. position. With the occiput left, the broader parietal part of the head would have been brought unfavorably in relation with the more contracted side of the pelvis; and to turn the head occiput right might have tried the neck. Yet, with a living child and a three-inch conjugate, one of these expedients would be preferred by me to either turning or craniotomy. The case of turning and delivery here reported was followed by metritis, but after remaining in a critical condition for some time the woman made a good recovery.

STATED MEETING, JULY 1ST., 1875. DR. A. H. SMITH, PRESIDENT, IN THE CHAIR.

ABORTED OVA.

DR. SAVERY presented three specimens of aborted ova.

The first was the result of a pregnancy of three months' duration, characterized by the various symptoms, as sick stomach, etc.

The abortion was preceded by considerable hemorrhage requiring the use of a tampon.

When the tampon was removed the mass was found lying in the vagina.

The sack was full of liquid, but the most careful examination failed to discover the fœtus.

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The second ovum was about 2½ months of development, and the third of a very early age, probably about six weeks after conception; but in neither was there a trace of a fœtus.

Dr. Goodell asked what were the pathological changes taking place, which produced a state of things like that shown by Dr. Savery's specimen.

Dr. Ingham replied that there had always been in these cases doubts whether they were aborted ova or not.

There have been three cases before this Society. One of these was referred to the microscopical committee, and they reported the presence of villi of the chorion. He thought that in these cases there was an early death of the fœtus with subsequent development of the chorion, and the fœtus had been dissolved by the amniotic fluid.

Stated Meeting, Thursday, September 2, 1875.

Dr. A. H. Smith, *President, in the Chair.*

OVARIAN TUMOR.

Dr. J. V. Ingham exhibited to the Society a specimen of a solid ovarian tumor recently removed by Dr. Walter F. Atlee, of this city, who had presented him with the following notes of the case.

Miss H——, of Mount Holly, asked my advice about a tumor of the belly, in the middle of May. She was 33 years of age, rather pale, but in other respects of healthy appearance. She had been annoyed by nasal catarrh for many years; some dyspeptic symptoms had begun about a year before, and for the last three months her menses had not appeared. The tumor was nowhere adherent to the skin, movable, not fluctuating, only to the touch it felt like a multilocular cyst of the ovary.

On the 14th of June, I removed the tumor here presented, with the assistance of my father, Dr. Atlee, of Lancaster, and Drs. Pleasants, Hunt, and Hickman. Having cut through the tissues covering the tumor, a large trocar was pushed into it, but nothing flowed through the canula. By some tearing of the tumor, and by extending the incision above the navel, it was extracted. The pedicle was very short and thick, and the clamp was applied very close to the left horn of the womb.

On the 14th day the clamp was removed; on the 16th day she came down stairs, and a few days afterwards she returned home to Germantown, from which place she came to be operated upon, perfectly well.

The tumor was referred, for microscopic examination, to a committee consisting of Drs. Tyson, Parry, and Ingham. At a subsequent meeting they reported as follows:

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REPORT.

"The committee to which was referred the ovarian tumor presented by Dr. Ingham, would report that they have carefully examined its structure, and find it made up of loculi of different sizes from that of almost microscopic minuteness to that of an inch or more in diameter. The walls of these loculi were composed of fibrous tissue and lined with a single layer of a most perfect and regular columnar epithelium. From the walls of these loculi often projected villous extensions, capped by this same layer of columnar cells.

"The cavities of the cysts were filled with cholesterin plates and epithelial débris.

"From these appearances your committee concluded that the tumor is an ordinary cystic colloid of the ovary (cystoma ovarii), and not a sarcoma or carcinoma."

Dr. Ellwood Wilson read the following reply to Dr. Goodell's paper of June 3d last, on

VERSION IN CONTRACTED PELVES.

Paper III.

Mr. President and Gentlemen:

To the general tone of Dr. Goodell's reply[1] to my criticism on his "Clinical Memoir on Turning in Pelves narrowed in the Conjugate Diameter," I shall make no answer. It was written, as was stated, in haste, and abounded in expressions which its author, on leisurely consideration of the character of this discussion, would have doubtless expunged. But I desire to reply to some few points contained in it, that I may clear myself from the aspersions which Dr. Goodell, in the excitement of his haste, and his impatience of criticism, sought to put upon me, and especially those in reference to the citation of authors.

In my paper I established the following objections to version as a substitute for the forceps:

1. The great mortality to the child in pelvic labors, arising from interruption of the fœtal circulation by compression of the cord and placenta, and showing in pelves contracted at the brim to three inches, or less than three inches, an almost universally fatal result.

2. That version is a painful and serious operation to the mother, proving fatal to her in one in ten and a fraction cases,

[1] Read before the Obstetrical Society, in June. See Feb Number of this Journal.

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according to Cazeaux, and one in fourteen according to Churchill. Even allowing for the alleviating influence of anæsthesia, the operation is a grave one, and not to be resorted to, save for well-understood and sufficient reasons.

3. That in pelves of plus three inches and of three and a half inches, there exists no sufficient reason for subjecting the woman to this serious operation, since she may sometimes even be delivered spontaneously; and again, her delivery may be materially aided, and even accomplished, by increased and prolonged voluntary effort on her part at the moment when the head impinges upon the narrowed marginal brim; or, these efforts failing, the case is readily within the control of a master with forceps, with safety to the mother, and a general result favorable to the child.

4. That the forceps can be applied to the sides of the child's head at the brim, and when thus applied, by cautious interrupted compression and traction, together with the expulsive efforts of the mother, and the resistance of her tissues, the head can be so moulded as to diminish its transverse or biparietal diameter from four to ten lines without injury to the child.

5. That an enormous strain, certainly a tractile force of one hundred and thirty pounds, cannot with safety be thrown upon the neck of an unborn child.

To no one of these propositions has Dr. Goodell offered any rebutting evidence, save the last; and that I am wholly right on this point I shall be able to show by abundant testimony.

Dr. Goodell, in speaking of the mortality of head-last labors, says, "Hodge rates the average still-births at thirty-three per cent. According to Capuron and Cazeaux, in the more difficult cases from sixty-six to seventy-five per cent. perish. Said the late George T. Elliot, 'I always regret to meet a pelvic presentation in my practice, for fear that the child may not be born alive.'" Further, "Since now these statistics represent the experience of the most skilled specialists, . . . it stands to reason that, in the practice of the profession at large, the average number of head-last still-births must be very much higher. For this mortality, fifty per cent. is, I think, a very low estimate."[1] He thus claims for pelvic natural labors a greater mortality for the child than I give in any quotation in my previous paper.

He further says, "My reviewer begins by showing the fœtal mortality of head-last labors, and of those attended by contraction of the brim, but he overlooks the fact that I have offered a new mode of delivery, by which I claim that this mortality can be reduced."[2]

[1] Philadelphia Medical Times, March 20, 1875, p. 385.

[2] MS. of Dr. Goodell, read in June, which, for convenience of reference, I shall designate his Reply.

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Now, to what does the doctor allude as this "new mode of delivery" in pelvic cases? Is it the supra-pubic pressure? Barnes writes, "Great assistance in extraction may be gained, and traction force economized, by getting an assistant to press firmly upon the vault of the head through the abdominal wall, thus helping to push the head through the strait. This proceeding was advised by Pugh and Wiegand, and quite recently Dr. Strassmann has insisted upon its utility. The possibility of deriving advantage from it should be borne in mind in all cases of head-last labor."[1] Yet Dr. Goodell ventures to say, "So far as I can judge from the history of these cases" (referring to pelvic cases reported by Simpson, Schroeder, Blot, and Taylor), "none of the operators, *excepting myself*, invoked the very substantial help of a propelling force; hence, the inference is logical that the conjunction of traction and propulsion offers better results."[2] The supra-pubic pressure clearly is not the "new mode of delivery," and Dr. Goodell is not warranted in judging that the writers he has named did not invoke an aid so simple, so well known, and so substantial. Or, is it his mode of making traction? We find this mode thus described: "The physician should make his first movement of traction in the axis of the outlet; for then the pubic side of the head will be tilted away from the inlet, while the sacral side will proportionately descend over the promontory, and affront the brim." Afterwards "the direction is reversed, and the child's body swept backwards upon the coccyx, the neck also being forced downwards and backwards into the hollow of the sacrum with all one's power."[3] It appears to me that if the head, yet above the brim of a contracted pelvis, could be changed in its position by pulling upon the child's body, the movements described would necessarily carry that pole of the biparietal diameter looking towards the front of the pelvis against or upon the pubic bone; and with the reverse movement recommended, the smooth convex surface of the head, looking towards the sacrum, would, being moist and glib with the fluids, rise up and pass over the convexity of the jutting promontory. Both the first and the second movement recommended could of necessity result only from a force acting very obliquely upon the head, the tendency of which would be to produce a rocking or see-saw movement; but this rocking would be above the brim, and not tend to engage the head, unless great force be used,—such a force as could be greatly economized if exerted by direct traction in the axis of the inlet. According to Barnes,

[1] Obstetric Operations, 2d Amer. ed., p. 253.
[2] Clinical Memoir, p. 21.
[3] Clinical Memoir, p. 19.

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"it is, above all things, necessary to draw at first as much backwards as possible, so as to make the head revolve around the jutting promontory until it clears the strait, when the head can enter its natural orbit, the curve of Carus."[1] He also says, speaking of the delivery of the head, "If you carry the body forward too soon, you simply convert the child's head and neck into a hook, or crowbar, which, holding on the anterior pelvic wall, will effectually resist all efforts at extraction."[2] Now, Dr. Barnes claims the experience of the management of two hundred cases of version,—Dr. Goodell, in his reply, says three hundred. But, supposing that Barnes was correct in his estimate, two hundred cases of version are certainly sufficient to give him great familiarity with the management of pelvic labors.

I believe, therefore, the best way to make the head engage would be to make traction coincident with the axis of the inlet. Statistics are, however, wanting to show that by either of these methods of delivery the fœtal mortality can be reduced materially below the estimates given in my previous paper.

In the Reply we find such statements as these: "I give reasons why an average head is more readily drawn through a narrow pelvis than a large head through an average pelvis."

This is purely hypothetical. It is a sort of sliding scale, that may be moved up or down to please the fancy of the narrator.

Dr. Simpson advocates "turning."

So he does, "as an alternative for craniotomy and the long forceps."[3] And he contrasts "the transient and not necessarily fatal depression of the flexible skull of the fœtus with the destructive and necessarily deadly perforation of it" (p. 452). Again, in speaking of the advantages of turning, Simpson says, "It is more safe to the mother, because it can be performed earlier in the labor, and more speedily than craniotomy or the application of the long forceps" (p. 465). Again, "When the long forceps are used in instances of arrestment of the head at the brim, they are in general never applied till the cranium is thrust and wedged down into the upper pelvic aperture to as great an extent as can possibly be effected by the unassisted uterine efforts" (p. 476). And yet again, "But it is principally as a substitute for craniotomy that I venture to suggest the operation of turning, etc." (p. 474). His book contains many like passages.

I fully agree with Radford, quoted approvingly by Dr.

[1] Op. cit., p. 252.
[2] Ibid., p. 208.
[3] Obstetric Works, first series, p. 449.

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Simpson, that "whatever practice can safely supersede the murderous craniotomy should be adopted;" but while this is to be accepted as a most humane doctrine, it cannot be regarded as offering any justification for the indiscriminate resort to version in coarctated pelves.

W Tyler Smith[1] recommends version "in some cases of moderately contracted pelves," but says "it is a serious operation as regards both mother and child. In the performance of the operation uterine inflammation may be excited, the uterus may be ruptured or perforated, and the shock of the operation is fatal in some cases" (p. 669). He says the head may be compressed one inch, and quotes Denman for a greater amount (p. 680). In contracted pelves he says the head of the child is in a state of flexion, and applies the forceps to the sides of the pelvis when the head is at the brim (p. 696).

Meadows[2] is also quoted by Dr. Goodell as recommending version as a means of delivery in contracted pelves. Speaking of the advantages of version, he says (p. 237), "It is excluded only by the existence of a pelvic diameter of less than three inches." He quotes Dr. Churchill as giving a mortality to the mother of one in fifteen,—it should be one in fourteen,—and recommends version "in certain cases of pelvic deformity where craniotomy would otherwise be required;" adding, that "of course the pelvis must be sufficiently roomy to admit of delivery without injury to the child by laceration" (p. 240).

In speaking of version, he says, "And after bringing down the arms" (he, unlike Dr. Goodell, gives no direction for traction upon the child's body until the arms are down), "with some traction the head will probably soon descend; but should the passage of it be delayed, and supposing the child to be living, we ought certainly to apply the forceps and terminate delivery" (p. 251).

Thus we see this distinguished author does not recommend a traction of "one hundred and thirty pounds" to be suddenly thrown upon the child's body by either a steady or a "pump-handle" movement. In referring to the use of the forceps he gives "the result to the mother, as far as can be gathered from the same source (Churchill), as with British practitioners one death in twenty-nine, with the Germans and French one death in thirty-four" (p. 211). As to the reduction of the child's head in its transverse diameter, he says, "as much as half an inch, and perhaps even three-quarters of an inch, can be gained without injury" (p. 215).

[1] "The Modern Practice of Midwifery." A Course of Lectures on Obstetrics, 2d ed.

[2] A Manual of Midwifery, 1871.

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Milne,[1] also quoted by Dr. Goodell, says, "From statistics given by Dr. Churchill in his admirable book, it would seem that this operation (version) was fatal to the mother in the proportion of one in fourteen;" and "it is a strongly-contested point whether or not in cases of pelvic deformity, especially contracted brim, version should not be tried instead of the long forceps or even craniotomy" (p. 238). Further, in speaking of version in narrow pelves he says, "In vertex presentations the chin lies to the sternum, and therefore the vertex and the biparietal part of the head enter the brim first; that is, with the larger diameter (the biparietal) opposed to the antero-posterior; in turning, on the contrary, the chin is extended, and the biparietal diameter enters the widest part of the pelvis. Version may be attempted at an earlier period than craniotomy, as a rule" (p. 239).

He also says, "The cases suitable for this line of treatment are those where the conjugate diameter is about three inches."

And in speaking of the dangers of version, he says,—

"1st. We are apt to lose children in turning, from compression of the cord or even extension of the neck; but the former, at least, as we shall notice in describing the method of operating, may be in part avoided.

"2d. The traction required may be so great as to contuse the maternal parts seriously.

"3d. We may miscalculate the diameters of the pelvis; and, after using strong traction, fail, and have to perforate after all."

He says further (p. 251), "The dangers to the mother are,—

"1st. Risk of lacerating the parts or rupturing the uterus.

"2d. Inflammation from the irritation, etc., of the operation.

"3d. Puerperal fever or phlebitis, from the same cause.

"4th. Serious if not fatal nervous shock."

Thus we find authors quoted by Dr. Goodell, in his Reply, stating that the vertex does enter in narrow pelves, flexed, and also acknowledging that there are great dangers in the operation of version, both to mother and to child. Both these statements were denied by Dr. Goodell in his reply.

But Milne says of the forceps, "Now we arrive at an instrument which it is impossible to laud too highly, or adequately to estimate the good which it has achieved."

From forceps delivery the "mortality to the mother was one in twenty-one and one-third" (p. 254).

"According to the French and German authors it was one in thirty-four."

[1] The Principles and Practice of Midwifery, 1871.

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Leishman, another authority quoted in the Reply, advises version in "cases of moderate pelvic distortion" (p. 484). Now, any one carefully studying his directions for making version, and observing the dangers and difficulties which he mentions as liable to arise during the operation, could scarcely advise the young and inexperienced physician to undertake so important an operation without a consultation.

In treating of the management of pelvic cases, he says, "When the breech is born and the legs lie between the thighs of the mother, and in footling cases, even before the passage of the breech, an almost irrepressible desire may possess the accoucheur to grasp the limbs and bring the labor to a rapid termination" (p. 328). He then describes the disastrous results that are likely to result from such a course, and condemns such procedures in the following language: "This, then, is an obvious error in practice, which the young practitioner should carefully avoid." Further, in speaking of the arms riding up upon the sides of the head, he remarks, "Under all circumstances it is an unfortunate complication, and requires, when recognized, immediate attention." Thus we see that Dr. Leishman does not recommend forcible traction upon the child's neck, nor even moderate traction, until the arms are first disengaged. Again, in speaking of traction for the delivery of the head, he says (p. 329), "Forcible traction of the neck is by no means free from the danger of causing instant death by injury to the spinal marrow." And he adds, "If, however, the resistance is unusually great, we must, in preference to dragging upon the neck, apply the forceps without delay to the sides of the child's head, and thus complete the delivery" (p. 330).

In Chapter XXVIII. (p. 448), in speaking of the forceps, he says, "It is scarcely possible to exaggerate the importance of this instrument, which is simple in construction, easy of application, and marvellous in power." He says, "If possible, but with exceptions to be afterwards noticed, the blades should be applied to the sides of the child's head" (p. 455). With the exceptions here alluded to, which refer to the applications of the instrument at the brim of the pelvis, the author just cited prefers to apply the blades to the sides of the pelvis; here I differ with him, and upon the evidence of much experience I declare that the forceps should always be applied to the sides of the child's head.

Also, "In so far as compression is concerned, a certain degree of this is essential in order to grasp the head with the blades, which otherwise would slip off; but by compression something more is implied than mere grasping, for by it, as is obvious from the yielding nature of the sutures and fontanelles,

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the actual diameter of the cranium may be materially diminished" (p. 459).

And "In cases in which the head is arrested by the pelvic contraction at the brim, we have three possible modes of action, among which we must select—turning, forceps, or craniotomy" (p. 492). Further, he says, "The dangers and difficulties of the long forceps are well known." Here we see the strong bent of the British obstetric mind as regards the dangers of what writers designate "the long forceps." It is an instrument that I very seldom use; but I have in many instances applied Davis's forceps with a pivot lock, as modified by Dr. A. H. Smith, and successfully delivered living children through pelves of three, and but slightly more than three inches. Yet, notwithstanding this adverse impression in the mind of Dr. Leishman in regard to the forceps, he states, referring to their use, "The first point of importance then is to determine whether or not the child is alive; and if, this being established, we fail to deliver by the long forceps, or that instrument is contra-indicated, the question before us simply is, Shall we turn or perforate?" (p. 492). The most earnest advocate for the forceps could ask no more than is here admitted.

He also cites Churchill, "who fixes the limits (for version) at two inches and six-eighths; and Barnes, as we believe with more justice, at from three and a quarter inches to three and three-quarter inches, so that we may say in round numbers that when the conjugate is less than three inches, to attempt to turn would be to subject the woman to needless risk, while we may be confident that nothing but failure could attend our efforts."

But the evidence given in my former paper clearly demonstrates that the child's head can be safely diminished in its conjugate diameter from six to eight lines, and even to a greater extent, by the judicious use of the forceps conjointly with the mother's efforts. Thus we may conclude, *à fortiori*, that in most instances, as statistics show, the woman, with the aid of the forceps, may accomplish her delivery without accident or injury, so far as she is concerned, and generally with safety to the child, when the pelvis has a capacity of three inches or upwards.

Finally, Leishman, in speaking of craniotomy, says, "The conditions, then, which may be held as warranting the operation of craniotomy are those in which the forceps and turning are of no avail," here again giving the preference to the forceps (p. 500).

Cazeaux is also referred to by Dr. Goodell as an advocate for version. Let us follow him for a few minutes, and see what he says upon this important subject. "A patient presented her-

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self at the clinique in 1858, whose pelvis was only two and three-quarter inches in its antero-posterior diameter. She was delivered in eighteen hours of a living infant at term, the dimensions of which were nearly normal, and whose head was scarcely deformed." Further, "Baudelocque relates (p. 558) having seen at the amphitheatre of Solayrès the head of a fœtus, which was elongated to such an extent that its greatest diameter measured nearly eight and a half inches, whilst the biparietal one was reduced to two and three-eighths or two and three-quarter inches; and he speaks of another very similar instance; but in neither of these cases was the child's life compromised for a single instant." Again, "M. Martin, of Lyons, has known a rachitic woman to be delivered of a healthy infant at term by the efforts of nature alone, where the autopsical examination showed that the antero-posterior diameter was only two and a half inches." You will remember that Dr. Goodell denied this reducibility of the child's head, or the possibility of delivery at term, with a pelvis of two and a half inches, and, greatly to my astonishment, he questioned ("Clinical Memoir," p. 20) the truthfulness of Madame Lachapelle's statistics.

In my paper I called attention to the fact that, in pelves contracted at the brim, the head is generally transverse at the brim, and that the forces which direct the head in this wise will, so long as the membranes are intact and the child free to move in its long or spinal axis, necessarily tend to drive the vertex to the larger side of the pelvis whenever (and this is almost universal) it is unsymmetrical. And I pointed out the great advantage of seizing the head in this relation, when assistance in labor was required. Now, at p. 559, Cazeaux says, "In most cases of deformity, the child's position is far from being an indifferent matter, for when the sacrum, in being carried forward, is, at the same time, turned to one side, whereby one of the lateral portions of the pelvis is more contracted than the other, who does not foresee that the labor may then be accomplished spontaneously, if the head presents in such a way as to offer its great occipital extremity to the well-formed side, and that, on the contrary, it would become impossible if the occiput should correspond to the contracted one?" Cazeaux here points out a great objection to version in pelves contracted at the brim; because, if the child thus situated is turned, and the version is made in the circumference of the fœtal ellipse (as universally advised), the occiput must necessarily be brought to the smaller side of the pelvic opening, unless the child should be twisted upon its spinal axis in the act of version, which would be a very dangerous procedure.

Cazeaux also says, at p. 560, "If the pelvis have at least

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three and three-quarter inches in its contracted part, here the labor, although in general longer, more difficult, and therefore more dangerous, both for the mother and the child, than in ordinary cases, may, however, be accomplished spontaneously, and, indeed, we might hope for such an expulsion in most cases." And "a spontaneous expulsion of the fœtus is still barely possible where there is from three and one-eighth to three and three-quarter inches in the contracted part" (p. 561).

He further quotes from Homberger a case in which "the sacro-pubic diameter was scarcely two inches in length; nevertheless, after having ascertained the flexibility of the bones, caused by the malacosteon, he declared that the delivery might be effected by the powers of nature. He ruptured the membranes at the end of twenty-four hours; then, after waiting as much longer, the engagement was sufficiently advanced to enable him to apply the forceps, when, by the aid of powerful traction, he succeeded in bringing away a girl, who lived four weeks." Also "in another woman, whose sacro-pubic diameter was two and a quarter inches, French measurement, at the most, Hasslocker, a physician of Landau, was enabled by the aid of external pressure [Dr. Goodell's new method] to make the child's head engage in the cavity of the pelvis; he then applied the forceps, and found that only a moderate effort was required to deliver a dead child weighing six pounds and a half." I mention this case as showing again that supra-pubic pressure is no novelty in obstetric practice, and in further illustration of the statement that in many instances of coarctated pelves the contraction is *merely marginal*, and that with such pelves women are frequently enabled by their unaided efforts to drive the head beyond the point of resistance.

I also give the account of five labors in the case of Mrs. ——, stout or fleshy:

First labor, October 10, 1868. Vertex to left acetabulum; twenty-five hours; male child, living. When the patient was lying upon her left side, slightly inclined towards her face, the index-finger readily touched the promontory, with slight pressure upon the perineum. I therefore regarded the diameter of the pelvis as about three and one-fourth or three and one-third inches.

Second labor, June 1, 1870. Vertex to left acetabulum; twelve hours; male, living.

Third labor, December 10, 1871. Breech; first position; twelve hours; male, living.

Fourth labor, October 29, 1873. Vertex to left acetabulum; sixteen hours; female, living.

Fifth labor, June 21, 1875. Vertex to right acetabulum;

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six hours; male, living; weighed nine pounds. In this labor the forceps were applied at the brim to the sides of the head; the child was born twenty minutes after the patient was placed in position for their use. The forceps were adjusted, the patient etherized, and the child delivered in twenty minutes. The child was not marked by the instruments, and I am quite certain I did not use a traction force of twenty pounds.

In all of her labors the pains were frequent and powerfully expulsive. By using the forceps as soon as the tissues were fully dilated, her labor was lessened fully one-half in duration.

Dr. Goodell has been at some pains to show that when women have been left in labor for thirty, forty, or sixty hours, and the "formidable long forceps" have then been applied over the face and the occiput of the child's head, or made to grasp the head in its fronto-mastoid relation, the women not only sometimes die, but also that such reprehensible procedures are frequently fatal to the child. Is this an argument in favor of version, or against the proper use of the forceps? Or, indeed, have such facts any value whatever in the present state of obstetric art?

Cazeaux remarks, "As a general rule, we may wait six, seven, or even eight hours after the membranes give way and after the os is fully dilated. It is unnecessary to add that if any accident whatsoever, grave enough to endanger the health of the mother or the life of the child, should occur during the labor, it would demand a more prompt interference of art" (*op. cit.*, p. 583). My own views are, that the time for using the forceps is as soon as the os uteri is fully dilated or sufficiently dilatable, the soft tissues relaxed, and it has been ascertained that the woman is not likely to accomplish the labor without assistance. I have on several occasions even adjusted the instruments to the sides of the child's head at the brim without rupturing the membranes. Certainly both the health of the mother and the life of the child would be endangered before the woman had been in hard labor for sixty hours.

He remarks, "With a pelvis of three and three-quarter inches, when the vertex presents, and the amniotic waters are partially discharged without the head making any progress, an application of the forceps is the only remedy to which we can resort" (p. 583).

In referring to pelvic presentations, he says (p. 584), "We expressly recommended that no traction should be made on the pelvic extremity in breech presentations with a view of avoiding the straightening out of the arms and an extension of the head, and we still insist on the same precept here." Thus Cazeaux differs essentially from Dr. Goodell, and gives special

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directions for the avoidance of two complications liable to occur in pelvic labors, namely, the rising up of the arms and the extension of the head,—complications which Dr. Goodell seems to disregard, because he courts the extension of the head and disregards the rising up of the arms, even directing us to proceed to deliver, when the pelvis is ample, without restoring the arms. "In cases of pelves known to be ample, I can conceive of its being perfectly justifiable to follow Giffard and Froriep's plan of dragging the head through with the impacted arm extended, rather than that of losing golden minutes in liberating it."[1] In my opinion, no more dangerous rule for obstetric guidance than this has been announced since the publications cited, and Dr. Goodell may share jointly with these gentlemen the honors derived from it.

Again, in speaking of labors with a pelvis of three and three-quarter inches, Cazeaux says, "If the uterine contractions are exerted on the child's body alone, or repeated attempts at extraction have been made without success, . . . if, in a word, the child's life has been compromised, either by the length of the labor or the useless intervention of art,—in all such cases it may be regarded, though still living, as non-viable, and craniotomy is considered by most modern accoucheurs to be the only possible measure. We ourselves held this opinion for a long time; but, being rather less fearful of the probable consequences of pelvic version in contraction of the pelvis, we now think that, so long as any chance remains in favor of the child, the latter operation (version) should first be attempted" (p. 586). We most cordially accept this lesson. Cazeaux merely says that when we have exhausted all other means and there yet remains a chance for the child, version should be attempted before resorting to craniotomy. We have in the above quotation nothing adverse to the skilful use of the forceps in such labors.

He further states, in speaking of pelves of three and three-quarter inches, "After having waited for all that can reasonably be expected from uterine contraction, the forceps are to be applied when the vertex presents favorably, and if with moderate traction they are found to be insufficient, the instrument should be withdrawn and pelvic version attempted, in the hope of extracting a living child." Here again we have a preference for the forceps. "Should this attempt prove fruitless, the contractions may be allowed to go on for an hour or two longer, and if these are ineffectual the instruments are again to be applied." This is the course recommended before re-

[1] Philadelphia Medical Times, March 20, 1875, p. 386.

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sorting to craniotomy. Further, Cazeaux continues, "When the pelvic diameters afford but two and three-quarter inches to three and three-quarter inches, the indications to be fulfilled remain the same."

We see by the above directions that the preference of Cazeaux is strongly in favor of the forceps; and that these failing and the child being yet alive, he humanely recommends that version should "be attempted," hoping thereby to save the life of the child. Again, in speaking of the forceps, "The blades should be applied as nearly as possible on the sides of the head in such a way that the concavity of their margins shall be directed towards that part of the head which is to be brought under the symphysis pubis" (p. 801).

Again, referring to the application of the forceps when the head is movable above the superior strait, he says, "It has elsewhere been shown that whenever the smallest diameter of the pelvis amounts to three inches, there is reason to expect that delivery can be effected by means of the forceps (p. 813).

When the head is movable above the brim, the author prefers the application of the instrument to the oblique diameters of the head. He states in another place, "In fact, the contractions usually exist at the superior strait, where it is particularly apt to affect the sacro-pubic diameter; and as the head always has a tendency to present its long diameter to those of the pelvis, when retained above, it is generally found in a transverse or an oblique position (more frequently the former). Its biparietal diameter will therefore correspond to the smallest one of the strait, and of course the blades of the forceps should be applied in the direction of this diameter; but we have shown that such an application is not possible in any case, and this impossibility is still more evident when contractions exist" (p. 821).

He therefore admits that if the forceps could be applied to the sides of the head, they would act by compressing the diameters of the head at fault. We have seen that they *can* be thus applied. He says the dangers to the child are from too rapid compression. I recommend that they should be used with caution and delay. I may thus claim to have answered or removed the principal objection which Cazeaux urges against their use in contracted pelves. He even makes the following admission in favor of forceps: "When the smallest diameter of the contracted pelvis is less than three inches, we are still almost obliged to try the forceps before having recourse to craniotomy or symphyseotomy" (p. 822).

"And it has several times been the means of extracting a living child through a diameter of but two and three-quarter inches."

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Moreover, I quote Dr. Goodell's Reply: "We of this city are flourishing our cephalic applications of the forceps in the face of the English pelvic applications;" and again, "But while numerous facts seem to prove that in very narrow pelves the forceps cannot compete with version, I am sure that its range of usefulness can be very materially widened by that cephalic application of the blades, viz., to the sides of the head, which is practised by the best obstetricians of this city."[1]

The reason why he (Cazeaux) changed his views of practice, he acknowledges, was owing to views brought forward by Simpson and Radford, namely, that when the head engaged in the pelvis by its base, it could be more readily drawn through the narrowed pelvis than when it presented by the vertex. This view of Dr. Simpson's is not accepted by Hodge, Leishman, and McClintock; and certainly I cannot accept it.

Cazeaux also says, "If on the contrary we suppose the cone represented by the head to engage by its point, that is to say, by its bimastoid diameter, the traction upon the body of the child might have the following effect, namely: if the shortened pelvic diameter presents at least from two and three-quarter inches to three and a quarter inches, it will present no serious obstacle to the engagement of the bimastoid diameter, and from that time the compression upon the sides of the parietal protuberances produced by the resistance of the symphysis pubis and sacro-vertebral angle tends to force them nearer together, that is to say, to shorten the biparietal diameter, and the head drawn down by the accoucheur will engage in the contracted part of the pelvis like a wedge, the base of which is compressible; in short, the resistance of the bones of the pelvis in the presentation of the top of the head, tends to lessen the occipito-frontal or occipito-mental diameter, whilst in foot presentations it tends to diminish the transverse diameter, that is to say the only one which it is important should be reduced" (p. 823, Simpson). Here then is the great argument in support of version: namely, that it affords a means of making traction upon the body of the child in such a manner as may enable the resistance of the sides of the pelvis to act upon and compress the lateral surfaces of the child's head so as to lessen the conjugate or biparietal diameter; "that is to say, the only one which it is important should be reduced." Had these gentlemen conceived the possibility and tested the feasibility of applying the forceps to the sides of the child's head when at the brim, they would then have accomplished just what every experienced obstetrician acknowledges, with Cazeaux, to be the great consideration

[1] Clinical Memoir, p. 22.

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in the management of labor with coarctated pelves. With the forceps (properly applied), this lessening of the conjugate diameter is effected without danger to the mother, merely aiding her in her natural efforts, while at the same the child is subjected to far less risk.

In speaking of the biparietal and bimastoid diameters of the head, Cazeaux says this latter diameter is irreducible, whilst the former is susceptible, under the influence of pressure applied for a longer or shorter time, of being shortened to the extent of three-eighths, or even five-eighths, of an inch, and, quoting Baudelocque, "half an inch" (pp. 821–823).

Cazeaux then quotes Madame Lachapelle and others, as showing that version "affords us at least the hope of sometimes saving the child," and remarks that "notwithstanding the facts collected by that illustrious midwife, and whilst admitting with the English accoucheurs that the compression is less dangerous to the fœtus when exerted on the sides of the head than when its tendency is to shorten the occipito-frontal diameter, we confess that we cannot share their preference when the top of the head presents in a favorable position. The arrest of the base of the cranium above the contraction, the possible extension of the head, the stretching of the cervical region to which the tractions made on the body necessarily expose it, the possible compression of the umbilical cord during the time occupied in the extraction of the child, are, indeed, very unfavorable circumstances for the latter, and, unfortunately, greatly to be feared during version. But when, with a shortened diameter of three and a quarter inches, there coincides an unfavorable presentation, as those of the face or the trunk; and when, before the application of the forceps, it is first necessary to perform the cephalic version; or when, the top of the head presenting, it is so situated that its longitudinal diameter corresponds to the contracted one, we are of their opinion, and prefer version to the use of the instruments" (pp. 824, 825). In his allusions to the reference to these statements of Cazeaux in my review of the "Clinical Memoir," Dr. Goodell, in his Reply, takes an unwarrantable license in language.

Cazeaux remarks, "If, after several fruitless attempts made with the forceps upon a favorably-situated head, the heart is heard to beat distinctly and regularly, we should, if the pelvis has at least two and three-quarter inches, attempt the pelvic version before resorting to craniotomy" (p. 825).

He sums up thus: "To recapitulate, when the pelvis has at least two and three quarter inches in its sacro-pubic diameter, the forceps should be used if the top of the head presents in a transverse position. The pelvic version should be preferred:

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1st, in direct antero-posterior positions; 2d, in inclined or irregular positions of the top of the head; 3d, in face and trunk presentations." Pardon these lengthy quotations; they are produced to sustain the brief allusion of my former paper.

Dr. Goodell quotes Barnes as recommending version in pelves narrowed at the brim. Let us follow for a few minutes the lessons of this teacher, and see to what extent and under what circumstances he advises version. In speaking of obstetric instruments, he makes use of such expressions as these:[1] "For example, the noblest of all, the forceps." It is not saying too much to pronounce the invention of the forceps one of the greatest improvements in the history of obstetric science; and although at times dangerous to the mother or child, yet its life-saving power is so great as to cancel the evil results which have often followed its use. Thus we bring within the saving help of the forceps a further number of children that must otherwise be given up to the perforator or run the risk of turning" (pp. 28, 29). "It appears to me quite certain that in this country [England] we are yet far from having utilized the powers of the forceps to the highest legitimate extent" (p. 37). By a careful study of their instruments and their mode of applying them, the correctness of this observation becomes very apparent; and to this cause, I presume, must in a large measure be attributed Dr. Simpson's great fear of what he designates as the "formidable steel clamps."

Professor Barnes emphasizes the following rule: "*Whenever the long forceps will lock without force, it may be reasonably concluded that the case is a fit one for the trial of this instrument, and a reasonable attempt should be made to deliver by its aid before passing on to turning or perforation.*"

This embodies the whole subject now under discussion. And as an advocate for the masterly use of the forceps, I find no objection thereto. Certainly this proposition of Dr. Barnes cannot be regarded as an endorsement of the indiscriminate resort to version.

Further, he says, "As head presentation is the type of natural labors, it follows that to obtain a head presentation is the great end to be contemplated by art" (p. 164).

Referring to anæsthetics as a means of diminishing the suffering, etc., of version, he says, "These advantages are not, indeed, always obtained without drawbacks. A perfectly flaccid uterus indicates considerable general prostration, and predisposes to flooding" (p. 186).

In reference to the riding up of the arms upon the sides of

[1] Barnes's "Obstetric Operations," 1874.

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the child's head in pelvic labors, he says, "Hence often arises a serious delay in the descent of the head; for this, the most bulky and least compressible part of the fœtus, increased by the thickness of the arms, forms a wedge which is very apt to stick in the brim. This is one great reason for not putting on extractive force if it can be avoided. If, however, we find the arms in this unfortunate position, we must be prepared to liberate them promptly, and at the same time without injury" (p. 202). After discussing the mode of bringing down the arms, he emphatically says, "That is what has to be done, but it is indifferent which arm you shall bring down first" (p. 203).

In speaking of version as a means of sometimes saving children, he says (p. 237), "If children were sometimes saved, many mothers were injured or lost by attempt to turn under circumstances which are now encountered successfully by the forceps or craniotomy."

Dr. Goodell, in his Reply, quotes from Dr. Barnes a statement of Pugh's, an advocate of the long forceps, to the effect "that by version and the curved forceps he had never opened one head for upwards of fourteen years. Dr. A. Nebinger, of this city, writes me that he has never performed craniotomy. I suppose he can claim an experience of thirty years' active engagement in obstetric practice. Dr. J. Eshleman also informs me that he has never performed craniotomy. Dr. Jos. Warrington had but one case in an experience of thirty years.

Barnes also refers to Prof. G. T. Elliot, who "expresses it as his opinion that in a conjugate diameter of three inches and upwards, with a living child and a head presentation, first choice should be made of the forceps, but when the diameter is between two and a half and three inches with a living child version is preferable." In the same excellent work are some valuable statistics of "German experience in version as an elective operation in contracted pelves," which show that, as regards the safety of the child, the best results are obtained where moulding of the head is gradually accomplished by the uterine forces, but that where there is insufficiency of the latter the forceps is superior to version."

Dr. McClintock, quoted by Dr. Barnes, says, "I do not believe that the diameters of the head are more advantageously placed with regard to those of the pelvis, nor can I believe that the head is more compressible when entering the strait with its base than when it does so with its vertex, till this is demonstrated by direct experiment."[1] I fully coincide with Dr.

[1] Obstetric Trans., vol. iv., 1863.

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McClintock. Dr. Barnes also quotes Churchill, who says, "A living child can pass through a pelvis of three inches and two-eighths antero-posterior diameter with or without the forceps. With a pelvis of this size, then, the operation is unnecessary; and if the antero-posterior diameter be less than two inches and six-eighths, the operation would be impracticable."[1] I saw, at 6½ P.M., August 5, 1875, in consultation, a rickety patient at full term of pregnancy, and in labor since 10 A.M.; her pains had been regular. At 5 P.M., she had been etherized, and Barnes's dilator used. The os was dilated to about two inches, soft and yielding. We directed grs. xxx crystallized chloral, to be given during the evening. At 1 A.M. the vertex, which presented to the left side, dipped into the excavation and turned posteriorly in the space behind the projecting promontory. The forceps were applied to the sides of the head, and a living child was delivered without much effort. It weighed six pounds and seven ounces. The occipito-mental diameter was five and a half inches; the biparietal, three and a half inches. The woman was aged thirty-two. This was her second pregnancy; with her first she miscarried at six months. She had been seen by several physicians. Her pelvis was regarded as generally contracted. In touching, the index-finger was readily brought in contact with the promontory; with two fingers firmly pressed into the vagina, the top of the pelvic basin on either side could be touched. The diameters of her pelvis were estimated to be as follows: antero-posterior, +3, probably 3¼; transverse, 4, possibly 4¼; bis-iliac, not exceeding 3.

Barnes, commenting upon the statements of Churchill (p. 244), says, "I claim to speak with confidence, drawn from large experience, when I say that a head of standard proportions and firmness will hardly ever pass a conjugate of three and a quarter inches without the forceps, and very rarely indeed with the forceps,—that is, alive. I might even extend the conjugate to three inches and a half, and affirm the same thing."

Now, from my own knowledge and experience I can say positively that a living child can as a rule be born through a pelvis of + 3 or 3½ inches, as the case I have just narrated in part shows.

Barnes further says, "I believe no one advocates resort to version when the conjugate measures less than three inches" (p. 244).

Again, "It is enough to state that the operation is not recommended by any one when the pelvis is contracted more than one-fourth, that is, below three inches" (p. 248).

[1] Pract. Mid., 1866.

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He further declares his inability "to estimate the proportion of children saved or lost under the operation," asserting that it is enough to justify the operation if we save a child now and then. And, "assuming a standard head whose base (unyielding) measures three inches, this is obviously the limit beyond which the operation would be useless."

Further, "If the head should fortunately be under size or unusually plastic, there is a fair prospect of the child being drawn alive through a conjugate diameter measuring three inches [*i.e.*, by version], but generally from three and a quarter inches to three and a half inches, or even a little more, is the working range for a child at term."

On p. 251 Dr. Barnes says, "The operation [version] may also be performed, as the complement to premature induction of labor, where the conjugate measures two inches and three-quarters to three inches and a half. Indeed, this I believe to be one of its most valuable applications."

In alluding to the difficulties in version when the head cannot be brought through the contracted brim, he says, "Of course the mother may suffer if we persevere in dragging the child too long and too forcibly" (p. 245). Now, what shall be the limit of this dragging? Dr. Goodell says he has repeatedly thrown a force of one hundred and thirty pounds upon the child's neck, with a pump-handle movement.

J. Braxton Hicks has been quoted as an advocate of version. After a careful perusal of his book,[1] I cannot find that he recommends anything like an indiscriminate resort to version in contracted pelves. To use his own words, he recommends version "where there is not too great a discordance between the fœtal head and the maternal passages" (p. 1). He informs us that the practice of version was much interfered with when the forceps were introduced, and calls attention to "the great facility thus given the practitioner in delivering the head, and the marvellous advantages apparent to every one over the perforator and the hook, especially in cases where turning was impossible" (p. 2). "Happily, however, we can offer the fœtus another chance for its life, and can place turning before the perforator. By some practitioners turning is placed before the forceps; for *myself*, I prefer, as a rule, the forceps first" (p. 2). He is well aware of the dangers of version, as is evident from these extracts: "I again wish to urge the importance of not delivering the child with rapidity after the accomplishment of version" (p. 28). And, referring to the advantages to the child, "they are greater, provided we do not use force to extract it."

[1] Combined Version, 1864.

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Look at these two cases from his book:

Case 13.—"Coarctation of the brim. Version. The head gave much difficulty while passing the brim, but eventually it was delivered without perforation." The child was still-born.

Case 14. Coarctation of the brim.—First, the woman had borne a living child at full term, therefore the obstacle at that time was not extreme; secondly, it was possible that the head had never been fairly applied at the brim; thirdly, if there was a greater facility for the passage of the head by breech delivery, it might possibly in this instance be successful in saving the child. "After version it was found that the head, however, on reaching the brim would not pass through until after much time had elapsed, and then only by perforation through the occiput and mouth" (p. 56). In truth, his first choice in labors with coarctated pelves is the forceps; he resorts to version very cautiously. There is clearly a doubt in his mind about the possible advantages of the head passing the brim with greater facility in breech cases than it does in cephalic cases; and finally, we may reflect upon the results of his cases, which do not offer much for version.

Dr. J. Eshleman writes me, "I have delivered by the forceps several children alive in diameters of three inches and three and a half inches." Dr. A. Nebinger also writes, that in his practice he has delivered living children at full term through pelves of three and a half inches, and that he has never delivered a woman of either a living or a dead child which passed through a pelvis of only three inches at the conjugate diameter of the superior strait, because he never had such a case occur in his practice. And in confirmation of this I may add as the result of my own observation that in this community we do not meet with many cases of contraction at the brim to a degree of less than three inches. And Schroeder says, "It has already been said that the simple flat pelvis is the most frequent of all narrowed pelves, and doubtless more frequent than all the other varieties taken together, and is therefore a very frequent cause of dystocia; however, it does not show the highest degree of contraction, for its conjugate rarely measures less than eight centimetres, or 3.14 inches" (p. 238). In my previous paper I referred to Schroeder's statistics of version. "We [Schroeder] therefore recommend version in *all* cases of pelvic contraction where this is not absolute. Our reasons for doing so are: first, in the interest of the mother; second, in very great pelvic contractions, with a conjugate of $+7\frac{1}{4}$ centimetres ($2\frac{8}{12}$ inches), we have extracted live children; third, because perforation of the after-coming head is neither more difficult nor more dangerous to the mother than that of the presenting head" (p.

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262). These "live children" were evidently very small, because immediately following this statement he says, "Occasionally we may have the pleasure of extracting a live child of moderate size through a conjugate which measures less than eight centimetres."

Dr. Schroeder, after stating that he always recommends version in contracted pelves, says, "When the conjugate measures not less than nine and a half centimetres, the head presents at the brim in the way before described (vertex). Whilst the os is very slightly dilated the cranial bones are made to overlap each other, and a caput succedaneum is formed; thus the head enters the brim, and the child is pushed through the pelvis, the os gradually dilating. In such cases, the mother, as a rule, does not suffer at all, and the child also is usually born in perfect health" (p. 258).

Now, Schroeder is certainly one of the strongest advocates of version. Yet he informs us that with a pelvis of nine and a half centimètres (+3.7 inches) the woman can accomplish her delivery without "*suffering at all*" and the "*child be born in perfect health;*" yet, as you may observe, it is about what Dr. Barnes represents as the "working range for version at term." This degree of contraction comes fairly within that class of cases which I have said are within the control of the natural efforts of the mother, or easily so with the aid of forceps.

Let me quote Schroeder further: "The reasons why we do not recommend the forceps in these cases" (contracted pelves) "are the following: the head enters with the sagittal suture in the transverse diameter of the contracted pelvis; but when the head is high up, the forceps can only be applied in the transverse diameter of the pelvis, and consequently the blades must grasp the forehead and the occiput" (p. 259). We cannot step back two centuries in order that this assertion of Schroeder's may be accepted as an unquestioned canon in obstetric practice. Moreover, Dr. Goodell has himself positively asserted that the forceps should be applied to the sides of the child's head,—that is, at the brim. This has been for many years my own practice, and I have never known a patient to die from the use of forceps in my hands. If Schroeder understood the application of the forceps at the brim, as it is practised in this city, he might change his views as to the propriety of version in *all* cases of contraction not absolute.

K. Braun, of Vienna, is also said to be an advocate for version. There is reported in the *Philadelphia Medical Times*, February, 1875, a case from his clinic. The woman was a primipara, aged twenty-three years. Strong pains for one day. An examination with the finger gave an estimate of the pelvis

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at two and three-quarter inches or, at most, three inches. Version was made. There was great difficulty in disengaging the arms; but it was impossible to extract the head, even after the child was ascertained to be dead, and delivery was effected by the trepan and cranioclast. I am not able to say whether, in contracted pelves, version is always the first choice of Braun or not; but the result of this case is a practical confirmation of the teachings of Hodge, Leishman, Cazeaux, Churchill, Elliot, Barnes, and J. B. Hicks. Dr. Goodell quotes Hodge, alluding to cases where women are delivered with pelves of three inches, as saying, "Such cases are of very rare occurrence. Few accoucheurs have been permitted to see them." Let me add what Dr. Hodge says in immediate connection with this statement: "Statistics, we believe, have thrown no special light upon this point, and we have a right to conclude that such deliveries are exceptional, and should not be the foundation of a practical rule. In other words, practitioners ought not to commit such cases of labor, where there is but three inches in the short diameter of the pelvis, to the unaided efforts of nature."

It is, however, generally admitted that a child may be born alive by the natural efforts through a pelvis of three inches. Dr. Hodge, referring to the dangers to both mother and child in labors with contracted pelves, very emphatically advises against prolonged delay. "In view, therefore, of these imminent dangers to the child, and even to the parent, the suggestion of waiting any length of time when there is but three inches in the short diameter of the pelvis cannot, we believe, be justified" (p. 400). And "in cases where there is a disproportion between the head of the fœtus and the passage of the pelvis, demanding more power than can be exerted by the mother, the forceps has been instrumental in saving a large number of children which otherwise would have inevitably perished," etc. (p. 401).

We have seen that Hodge, in his "Obstetrics," positively asserts that children can be born at term through pelves of three inches, and that the delivery in such cases may be greatly facilitated by the forceps. A later paper [1] contains the following more exact statement: "The occipito-mental diameter may be elongated from five to six or six and a half inches. As to the lateral diminution of the head, it is usually stated at from three to six lines; but as well-developed fœtuses have been born alive where the conjugate of the brim has not measured

[1] On Compression of the Fœtal Head by the Forceps and Cephalotribe.—*Am. Jour. Obst.*, May 1875.

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more than three inches, we have a right to infer that the biparietal diameter would be lessened to six or eight lines" (p. 4).

Further he says, "In addition, experience proves that no matter how much pressure is made upon the cerebral mass during labor, even for a long time, the child may survive, provided there is no solution of continuity of the tissues and no internal extravasation" (p. 8). And after a full examination of the causes of death to the fœtus in pelvic labors, he refers to forceps defectively constructed, and to the accidents likely to result from their use, saying, "No wonder then we read of such horrible lacerations of the uterus and vagina—accidents which ought never to occur with a well-constructed instrument" (p. 9).

As to the successful use of the forceps as a compressor, we find him advising that "no unnecessary delay should be permitted. As soon as it is ascertained that the natural powers are inadequate, artificial means should be employed" (p. 12), and "all action with the forceps should be intermittent and in unison with the uterine efforts. Constant traction would keep up constant uterine action, which, interfering with the respiratory powers of the placenta, would be dangerous." Further, "Another important rule is, that the blades should be as nearly coincident as possible with the occipito-mental diameter of the head, as compression will then be made in the most favorable direction" (p. 13). Indeed, Dr. Hodge prefers that the forceps should be always applied to the sides of the head, except when it presents obliquely or transversely at the brim; and this is his only exception to the rule. Thus, "in no case, therefore, in our opinion, should the blades of the forceps be ever applied directly to the pubis and sacrum" (p. 259). Dr. Goodell, in his Reply, is mistaken when he says that I quoted Hodge as advising the application of the forceps to the sides of the head *when at the brim.*

With moderately contracted pelves, Dr. Hodge says, "It is very universally true, when the process of labor is not interfered with, that either the chin or vertex presents; but, as already remarked, it is not the top of the head, but the occiput, that presents; for the top of the head to present is *contra naturam.*"

"The presentation of the vertex, therefore, is more favorable for delivery than the presentation of the base of the cranium, the length and compressibility of the occipital extremity being greater than that of the sides. No argument, therefore, for version by the feet can be drawn from the supposed advantages of the wedge form of the sides of the head" (p. 16).

Dr. Lusk, in a *resumé* of German practice published in

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Elliot's "Obstetric Clinic," covering many thousand cases, states that after making every allowance for doubtful cases the mortality of children in deformed pelves is thirty per cent. in vertex cases, and thirty-six per cent. in version cases. Dr. Lusk concludes that the experience in Germany is decidedly in opposition to Simpson's views.[1]

Dr. McClintock, of Dublin, and Dr. Martin, of Berlin, both favor occipital rather than pelvic deliveries in contracted pelves (p. 18). I cannot avoid the conclusion in view of all these facts and opinions, that in cases of contracted pelvis where there are at least three inches in the conjugate diameter, the delivery by suitable forceps is far more safe for the mother, and that the mortality to the child is at the same time less.

Hodge then contrasts delivery by the pelvic operation: "No time is allowed for the gradual compression and moulding of the cranium. Powerful traction must be made by the muscles, superadded, according to some, by the weight of the accoucheur, all of which power is directed through the medium of the child's neck, injuriously to its tissues, and not infrequently there is a complete laceration of it, so that the practitioner sometimes finds himself prostrate, holding the decapitated trunk in his hands; certainly this is not in accordance with science based on natural laws" (p. 19).

Dr. Goodell has questioned my statement that Dr. Meigs applied the forceps to the sides of the child's head. I refer him to Meigs's *Obstetrics*, p. 547: "The blades are to be applied to the sides of the head, the extremities of them passing up nearly as far as the chin."

And p. 554, "The instrument being now adjusted over the sides of the child's head."

Or p. 553, "It should not be forgotten that the forceps embraces the head in a direction from the vertex to the chin."

In referring to the application of the forceps before rotation is completed, he says, "The first and one of the most important steps here is to ascertain accurately, I say with absolute accuracy, the situation of the fœtal head" (p. 557). He then explains the importance of this to be, that the operator may *adjust the blades to the sides of the child's head.* Thus we see that he not only recommends the application of the forceps to the sides of the head, but also, in common with all other operators with the instrument, to make compression. And we find on p. 557, "Inasmuch as we cannot exert any very considerable tractile force without compressing the head with a severity proportionate to it," and so on.

[1] Hodge's paper, p. 17.

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Let me add once for all that I have repeatedly assisted the late Professor Meigs in cases in which he applied the forceps at the brim to the sides of the child's head.

Dr. Goodell attempts to show that Dr. Warrington does not teach the application of the forceps to the sides of the child's head at the brim, because he makes it a condition that the physician should be skilled in their use, and if not skilled in their use he had better make version.

This reasoning is on a par with Dr. Goodell's allusion to Baudelocque's celebrated remark, "that it (the forceps) has been more injurious than useful to society." We all know that this remark of Baudelocque's refers only to the ignorant and unskilful use of the instrument. Now, Dr. Goodell may not be aware that for ten years I assisted Dr. Warrington in his lecture-room, and that I am altogether familiar with his teachings and his bed-side practice. I must simply reaffirm that he taught and practised the application of the forceps to the sides of the child's head at the brim of the pelvis;[1] and elaborate directions for this mode of application, when necessary, are to be found in his writings.

Dr. Goodell refers to a case occurring in the practice of Dr. Fox, and reported by Meigs: "Dr. Fox, the attending physician, called in Drs. James, Meigs, and Lukens. Dr. Physick was called on, but was sick. Dr. Dewees was called, but was absent from the city. Dr. Hewson was added to the consultation, making five prominent physicians who saw the case." I shall not detain you with a lengthy narrative, because the case is familiar to every novice in the profession. 1st. Dr. Fox found there was a "sensible deformity." 2d. Drs. Fox and James found "from as accurate measurements as we were capable of making, we came to the conclusion that there was not at most three inches in the antero-posterior diameter. Drs. Meigs and Lukens saw her, as per appointment, by this time. After repeated and the most accurate examination that the case admitted of, we were unanimous in the opinion that there was not more than two inches in the antero-posterior diameter; most probably only one inch and three-quarters."

Dr. Goodell says, "It does not appear that any of them tried to apply the forceps." No, they did not, it is true, nor did they, so far as we can find, attempt version. Dr. Meigs delivered the woman on this and a subsequent occasion by craniotomy, and informs us that "this patient again became pregnant; that the child presented by the breech, which would make delivery *per vias naturales* absolutely impossible," and

[1] See Warrington's Obstetric Catechism, pp. 253, 259–60.

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because of this complication she was delivered by the "Cæsarean operation;" and again in a fourth pregnancy, with success. I do not see in the report of this case anything adverse to the use of the forceps in pelves of three inches and upwards, and there is no allusion to version; on the contrary, when it was found that the child presented by the breech, these eminent physicians abandoned the case to the "Cæsarean section." But it does show that five distinguished physicians, after the most careful examination of the pelvis repeatedly made, were greatly at a loss in their estimate of its capacity, which they variously found to be from three to one and three-quarter inches in diameter; yet when I allude to the possibility of Dr. Goodell's being mistaken in the nice fractional estimate (to 2.82 inches) of his ninth case, he considers it a discourtesy.

Again I quote from the Reply: "But granting that Siebold, Velpeau, and others could reduce the biparietal diameter when the blades were accurately adjusted to the sides of the child's head, what advantage did this give to those of them who in narrow pelves applied the blades to the occipito-frontal diameter?" By the first proposition stated we gain all that art can give for the relief of the difficulty under discussion,—namely, the greatest possible facility of compressing the head in the direction in which it is most yielding, and in those relations in which compression according to all experience is found to be least dangerous to the child. And this in co-operation with the natural efforts of the mother. Baudelocque says, "I have taken children whose heads seemed to have lost nine or ten lines of their natural thickness in passing the superior strait; also the heads of several of these children were above six and a half inches, and even seven inches long, while the thickness from one parietal protuberance to the other was but two and a half to two and three-quarters, and in some, three inches" (p. 398). And in a foot note he says, "Solayres informed us one day in his lectures, that he had taken a child the evening before whose head, at the moment of its birth, was eight inches all but two lines, measured from occiput to chin, while it had preserved but two inches and five or six lines in thickness."

Simpson remarks that "Of all directions the lateral is the one in which the child's head can endure the greatest degree of compression with the least degree of danger." He also quotes Ramsbotham for the same opinion: "A full-grown fœtal head may be lessened from side to side, without endangering the child's life, one-seventh of its own extent, or from three inches and a half to three inches," and adds, "We have just now seen that Dr. Denman imagines that the amount of compression may

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be carried much further,—namely to one-third—without the life of the child being necessarily injured and destroyed."

We find Hodge saying, "In one case of Dr. Denman the depression of the parietal bones measured one inch."

I have seen it reduced ten lines, and he himself states that the head may be safely compressed in its conjugate diameter from six to eight lines, and gives a case in which it was reduced ten lines. Most authors admit that from six to eight lines is a safe range.

Dr. A. Nebinger writes me that in his practice he has observed that the head may be reduced in its biparietal diameter by the efforts of the mother, aided by compression and traction with the forceps, without injury to the child, from half an inch to one inch.

We have here abundant evidence that the child's head can with safety be greatly reduced when the compressing force is applied in its lateral direction. And this is a convincing argument in favor of the application of the forceps to the sides of the head. It may be claimed that this is no less an argument in favor of version than of the forceps; that the reduction is the result of the efforts of parturition rather than of the forceps. Not at all. With the head presenting, the forces of the mother are immensely more efficient than they can be after version has been made; while, with the head presenting and the forceps properly adjusted, we add to the maternal forces a new compression and a tractile force, not inferior in degree, yet vastly safer than that which after version can be brought into play,—a compression and traction interrupted, graduated, made at the moments of uterine contraction, desisted from in the intervals of rest. I have used the forceps in this way eight hours, with, as the result of my patience, a living child and an uninjured mother,—a result which the brilliant operation of turning would not have reasonably allowed me to expect in the case.

To the second question, namely, "What advantage did this give to those of them who in narrow pelves apply the blades to the occipito-frontal diameter?" I reply that this is not the way to adjust the instrument. Dr. Goodell himself cannot indorse it. It increases the danger to the child, and aggravates the difficulty that the forceps is used to overcome.

Dr. Churchill[1] gives the mortality to mothers resulting from version, as follows (p. 312): "In 2939 cases where the result to the mothers is specially mentioned, 212 mothers died, or nearly 1 in 14."[2] He limits the use of the forceps to three inches as a minimum diameter.

[1] System of Midwifery. Condie, 1866.
[2] In my previous paper I said 1 in 14.

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Dr. Goodell alludes to the liability of the cord to become prolapsed while applying the forceps at the brim, and makes this an objection to the operation. We admit that it is possible for this accident to occur as a complication; but such an occurrence is purely accidental. He says, "I have met with it in the ratio of twice in three cases." This is a remarkable frequency. I have seen but two cases of prolapse of the cord occurring in forceps cases in thirty years, and neither of these cases occurred in contracted pelves.

Dr. Goodell is mistaken when he says that Mrs. McN., whose case I gave, was a patient of the Philadelphia Lying-in Charity.

As for the maternal death-rate in cases under the care of this Charity, every care is taken to have all cases fully reported. It is remarkable that, upon the representation merely of ignorant women applying at the Preston Retreat, of which they supposed him to be chief almoner, Dr. Goodell should discredit the records of any institution.

Dr. Goodell has quoted Schroeder as saying that "all the various steps of version are devoid of danger to the mother," and adds, "So they are when the operation is one of election, as in turning in narrow pelves." This statement is given to demonstrate that version is unattended with danger to the mother. Further on in his Reply, when he wishes to show that to turn and deliver a woman immediately upon her entering the Preston Retreat (Case viii. of the Memoir) is not a rapid labor, he says: "Now, Cazeaux, and with him all obstetric authors, define a rapid labor to be one in which the woman is delivered with only a few pains. But why is version resorted to in narrow pelves? Because the woman has been long in labor, with perhaps violent expulsive pains, and cannot deliver herself; because the forceps have been used in vain. Does this comport with the definition of a rapid delivery?" Let me ask, Was this the course pursued in Cases iv., v., and viii. of the Memoir? By no means. These cases are in strict accordance with Cazeaux's definition of rapid labor,—are indeed typical of rapid deliveries, and, as such, are liable to *post-partum* hemorrhages, swoonings, and shock, which may be fatal.

Dr. Goodell also speaks of squeezing the head with the forceps "viciously." I am not able to find such directions for using the forceps anywhere in Meigs's writings.

Simpson informs us (p. 451) that he turned and delivered in two or three minutes,—Dr. Goodell accomplished the same thing in three minutes. That such rapid labors predisposed to *post-partum* hemorrhage has been shown. All writers on obstetrics teach that *post-partum* hemorrhage is a serious and often fatal complication to the parturient woman, and also that

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she may die from nerve shock. Many illustrative cases are to be found in the journals of the past few years, as, for example, the case reported by Dr. George Mayles (in a recent number of the *Obstetrical Journal of Great Britain and Ireland*, p. 405), in which the woman died two hours after delivery; and every student of midwifery is familiar with the famous case of the Princess Charlotte. Indeed, the list might be increased indefinitely.

Are we to believe that the rupture of the perineum is a trifling accident? Are we to accept, on the evidence of a single case, the bold statement "that in nine out of ten cases of rupture into the rectum, the forceps will be found to have been the cause"? The evidence is altogether insufficient. Are we then to infer that this is the result of Dr. Goodell's personal experience? If it is, he has indeed been unfortunate with the forceps. Perhaps it is the result of observation at the bedside of those cases to which he has been called in consultation. Then the physicians who had managed the labors did not always use their forceps skilfully. Surely, if nine out of ten cases of rupture into the rectum have been caused by the forceps, some one has blundered. After all, it is merely an opinion that Dr. Goodell has ventured. In science, facts are better, or opinions derived from the observation of facts. In the absence of facts, I protest against such a sweeping condemnation of the profession or of the instrument, which is much more judiciously and dexterously used by the profession than Dr. Goodell seems to suppose.

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Stated Meeting, September 2d, 1875.

The President, DR. A. H. SMITH, *in the Chair.*

VERSION IN CONTRACTED PELVES.

By DR. ELLWOOD WILSON.

PAPER III.

BARNES writes that the perineum is almost always nicked in first labors, and I think he is correct so far as the vaginal margin is concerned. Tyler Smith ("On Parturition," p. 24), says, "Laceration of the perineum is no uncommon accident in midwifery. In most cases it begins at the vaginal margin of the perineum, extending towards the anus, and sometimes throwing the cavities into one. It is generally admitted that the laceration of the perineum occurs from the head of the child passing through the vagina so rapidly that the perineum has not sufficient time to dilate." Meigs, referring to the management of the perineum in forceps cases, says, "By rude and untemporizing exercise of strength we incur great hazard of rupturing these organs, and of maiming the patient *most injuriously*. An operator ought to be turned out-of-doors as soon as he allows *so scandalous a misdemeanor* to occur from carelessness or ignorance."

Dr. A. R. Edis (*Obstetrical Journal of Great Britain and Ireland*) gives a case in which the perineum was ruptured through the sphincter ani, involving the recto-vaginal septum for at least one and a half to two inches. The forceps was not used. I have seen a number of cases in which this accident was said to have occurred without forceps. Quite recently I saw a case of twenty years' standing which occurred in a first labor without instruments. Though Dr. Goodell can recall but a single case in his experience in which the perineum was *at all torn* by the after-coming head, the results of such labors prove that such an accident is liable to occur. It is true that in many instances the rent will unite by proper surgical treatment; but certainly there are a sufficient number of cases in which union does not take place to make the accident a matter of too much importance to be regarded with complacency.

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Dr. Goodell says, "I should have no misgivings about causing such a lesion were it necessary thereby to save the life of the child." Such a condition or necessity is not likely to arise; because in forceps labors, if the instruments are used as recommended by most modern authors,—that is, as soon as the woman has shown that she is incapable of accomplishing her task, and the tissues are dilated,—there will be no necessity for hurrying the delivery when the head is found to rest upon the perineum, since the fœtal circulation will not have been materially interfered with; nor will the compression of the fœtal head have been of long duration. Therefore, the few minutes that may be required for the relaxation of the perineal tissues will prove of no detriment to the child; whilst, if the expulsive efforts of the mother threaten this structure, the instrument gives us the best possible means of counteracting this undue force.

In pelvic labors, if the child is not destroyed before the head reaches the perineum, the increased amount of dilatation required for the delivery of the head after the breech and shoulders are born will be but very slight, and will soon occur. Meigs informs us that he has been able to keep the child alive after its body was born, and the head undelivered, for nearly twenty minutes. Simpson gives a like experience. Barnes declares he has for ten minutes. Pugh claims that the child may be kept alive for half an hour or an hour before the head is fully born. This is accomplished by a very simple expedient, familiar to the profession for a century; therefore in neither cephalic or pelvic labors properly managed can the necessity possibly arise for rudely and wantonly dragging the child's head through the perineum in the risk of maiming the mother, and thereby rendering her a wretched sufferer for the balance of her life. Dr. W. T. Smith's statement, as quoted by Dr. Goodell, that "it is better in any case that the perineum should be torn by the fœtal head or by the forceps than that a living child should be killed," is true. But, happily, in the present state of our art, we are not limited to these alternatives. We hope to save the life of the child and the integrity of the maternal tissues at the same time, in an immense majority of our cases.

Dr. Goodell, in his Reply, regards the possibility of contusion of the soft parts, followed by inflammation, sloughings, etc., and resulting in vesico- or recto-vaginal fistulæ or septicæmia, or even the death of the patient in version cases, as "mere assumptions."

Hodge says, referring to the difficulties of making version, "Even should this be effected without the contusion or lacera-

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tion of the uterus, the subsequent dangers to the mother from the child being rapidly and forcibly drawn through the contracted apertures of the pelvis are of the most serious import; contusions, lacerations, inflammations, and mortifications of the os uteri, vagina, bladder, or rectum, have not unfrequently resulted" (p. 405). Barnes also alludes to these sequences of version (loc. cit., p. 404).

Let me call your attention to some statistics:

First. W. H. Jones (Management of Labor in Contracted Pelvis, 1867) gives the following analysis of cases:

(*a*) 16 cases of labor, pelvis 3½ inches.

6 cases terminated spontaneously.

1 child died.

7 cases by forceps.

3 mothers died; 2 children died.

1 by version (transverse presentation) followed by detruncation and cephalotripsy.

2 by craniotomy.

(*b*) 15 cases of labor, pelvis 3½ to 3 inches.

2 terminated spontaneously; 2 mothers and 2 children saved.

1 terminated spontaneously (after uterine douche); mother and child saved.

2 terminated by forceps; favorable to both mothers; 1 child died.

1 terminated by spontaneous version; mother recovered; child died.

2 terminated by turning (transverse presentation); both mothers saved; 1 child died.

7 terminated by cephalotribe.

(*c*) 11 cases of labor, with pelvis 3 to 2½ inches.

2 terminated by forceps; 1 mother died; 2 children saved.

1 forceps were applied, but the labor was terminated by craniotomy; mother recovered.

1 turning was performed (transverse presentation); the labor was terminated by detruncation and cephalotribe.

1 breech presentation; detruncation was effected and cephalotribe was used; mother lived.

4 by craniotomy and cephalotribe; mothers lived.

2 cases premature labor was induced (by uterine douches); both mothers lived; children were dead.

(*d*) 9 cases with pelvis 2½ inches.

8 of these cases were terminated by cephalotripsy.

5 cases, cephalotribe directly applied to the child's head; 2 mothers saved.

2 cases of breech presentation; detruncation was followed by cephalotripsy. 1 mother died.

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1 case, cephalotripsy followed by version; the woman died immediately.

1 case by Cæsarean section; mother died; *child lived.*

P. 33. In two cases where the pelvis was narrowed to a little more than 2½ inches, the forceps afforded the means of extracting alive two children at full term. This table of statistics gives us also five cases of detruncation of the child. There is no evidence showing that more than one person made traction upon the child's body.

Second. The obstetrical history of two women. Read before the Obstetrical Society of Edinburgh by Dr. Angus Macdonald.

Case 1st, aged 41 years; pelvis contracted to close upon 3 inches; had given birth to 9 children at term; to 2 at 7½ and 8 months; and had had three abortions.

1st labor terminated unaided; three days' duration; child living.

2d labor terminated by version, after failing with the forceps; child living; a female.

3d labor, by turning; male child; still-born.

4th labor, by turning; female child; living.

5th labor, unaided; at about 7 months; child lived nine hours.

6th labor, induced at 8 months; terminated without instruments or turning; child living.

7th labor, by turning; female child; living.

8th labor, by turning; female child; living.

9th labor, by turning; male child; still-born.

10th labor, unaided; male child; made some efforts to breathe, then died.

11th labor, by turning; female child; living.

Case 2d, aged 25. The sacral promontory was very easily reached, and the whole pelvis small.

1st labor, version was made; it required great force for half an hour, before the head cleared the pelvis; the cervical vertebræ had yielded during the traction.

2d labor, induced at 7½ months; delivery by forceps; child was born alive, but died in six hours.

3d labor, at full term was delivered by forceps; child, a female; living.

Dr. Macdonald goes on to say:

"The cases in which turning is found to succeed best are such as my first case, in which we found, on the whole, that it did very well. But the great majority of such cases are made up of second and subsequent cases, which proved in the primiparous condition excessively difficult, and led to craniotomy and other serious results, as it is seldom in a first case that a diffi-

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culty suitable to be overcome by turning is proved to be so in time to allow of this operation being performed. These cases, however, are found to terminate just as easily by the application of forceps, if not without any interference at all. It is quite clear, on reading Schroeder's note after his paragraph on turning in deformed pelves, that his views are arrived at chiefly from cases of great difficulty in first labors proving easy in subsequent labors when turning was employed. But I hold that this reasoning is purely the *post hoc* fallacy. In the earlier part of my practice I turned much more frequently than now in such cases, and on the whole got fairly good results. Now I interfere much less readily, and find the results far better. I am not, however, inclined to hold that turning is such a purely harmless operation for the mother as Schroeder and others maintain. He further states that in his experience turning presents no advantage to the mother over the long forceps."

In his remarks upon these cases, J. M. Duncan stated that a number of cases diagnosed as cases of great contraction of the brim have subsequently come under his care, and that "in almost all of them he could find no good evidence of the contraction."

Dr. W. Y. Martin, in a recent number of the *Obstetrical Journal of Great Britain and Ireland*, is my authority for the following figures:

Of 56 women delivered by forceps, 26 were primipara and 30 pluripara. Mothers all lived. 38 children were males, 18 females. 3 children were dead; one of these was putrid. Omitting the one that was putrid, one child in 27½ died as the result of the operation.

In 20 of these cases, or nearly one-half, the forceps were used in consequence of contracted pelves.

Of 42 cases where turning was resorted to, 37 were pluripara and 5 primipara. Mothers all survived the operation. 30 male and 12 female children were delivered. 18 were dead-born, 8 were putrid. Omitting the 8 cases where the children were putrid, the mortality is one in three and two-fifths.

In 9 of these cases, or about one-fifth, version was resorted to in consequence of contracted pelves. Thus, in the table of forceps cases, where nearly one-half were contracted pelves, the mortality to the child was one in 27½. In version cases, in one-fifth of which the pelvis was contracted, the mortality to the child was one in two and three-fifths.

In the *Philadelphia Medical Times*, August 14, 1875, Dr. George Francis reports three hundred cases of labor which were completed within two hours after dilatation of the os, and in which the forceps were used fifty-one times, or once in six cases. There were 301 children born. All but four lived.

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Three of the mothers died. One of these was at the point of death when first seen, probably from pulmonary thrombosis; and the child, being nearly born, was safely extracted at the very moment its mother died. Another had erysipelas when labor set in, and died of blood-poisoning. The third was apparently exhausted by a very long first stage, in which no interference was permitted. By the time the os was dilated she was in high fever. There have been no deaths in the 179 women last delivered. While it is true that the forceps was used in all three fatal cases, he sees no reason to think that the operation affected the result in either of them. After delivery the perineum was examined, and in but one case—which, by the way, was not instrumental—was there found sufficient tearing to need the stitch. The application of the instrument rarely gave any more pain than the previous digital examination, and never required anæsthesia. The catheter was not once required, either during or after confinement.

Stated Meeting, Thursday, October 7th, 1875.

The President, Dr. A. H. Smith, *in the Chair.*

Dr. Ellwood Wilson concluded his paper on

VERSION IN CONTRACTED PELVES.

Paper IV.

In the Reply, Dr. Goodell denies that Dr. Dewees applied the forceps to the sides of the child's head, at the brim. I refer to page 294 of "Dewees' System of Midwifery," where we may read as follows:

"The blades of the forceps are always to be applied to the sides of the head,—that is, over the ears of the child. When necessity (which is very rare) obliges us to depart from this rule, it is but an exception to the rule."

To show that he did not regard it as a dangerous instrument, when skilfully used, let me quote from the foot-note on page 280:

"I am convinced that if the forceps be judiciously employed, the lives of very many children may be saved, and that the death of the mother is a rare occurrence."

Prof. Davis writes: "In my own practice, as one of the

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physicians to the Maternity Charity of London, I have the satisfaction of being able to assert that I have never incurred the mortification of losing a mother in consequence of a forceps operation."

Let me now call your attention to a remarkable fact. Not one of the authorities mentioned by Dr. Goodell as recommending version as a means of delivery in contracted pelves applied the forceps to the sides of the child's head, at the brim. On the contrary, they applied the instrument over the face and occiput of the child, using forcible and rapid compression, most of them declaring that when the forceps was used the case must be terminated in half an hour, or an hour at most; and they did not resort to the use of the instrument until the woman had been many hours in labor, and was approaching to or was already in a state of exhaustion. It is no wonder, then, that the result of such delays and of such modes of using the instrument were frequently fatal to both mother and child.

I will here give the history of Mrs. G. Four feet and five inches in height; weight one hundred and ten pounds. Her pelvis, I think, is not more than three inches in the antero-posterior diameter. In making the touch, the finger is easily brought in contact with the promontory, and can follow the inner surface of the sacrum to the point of the coccyx. Her first labor occurred July 16, 1872. Vertex presented to the right ilium posteriorly. The forceps were applied to the sides of the head without difficulty, and in the descent the vertex rotated anteriorly. Child a male; labor lasted 48 hours; was still-born. Second labor, February, 1874. Vertex to the left ilium; forceps to the sides of the head; female child; living. Third labor, Sept. 6, 1875. Vertex to left ilium; forceps to sides of head; labor 8 hours in duration; male, still-born; weighed 8 pounds. After the forceps was adjusted the head descended into the excavation with the second pain. Moderate traction, coincident with uterine contraction, was continued for about twenty minutes, when the head was born. The shoulders were found to be fixed at the superior strait, and were brought down with difficulty. I attributed the fatal result to the child to the traction (moderate,—not more than 30 or 35 pounds,—and strictly in coincidence with uterine contraction) with the forceps before the shoulders had descended into the excavation.

I now ask your attention to another very important argument brought forward in favor of version, viz., the tensile strength of the child's neck.

Dr. Goodell quotes (Clinical Memoir, p. 17) Joulin as assert-

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ing that a force varying from 113 pounds to 225 pounds may be brought to bear upon the child's head by means of the forceps, and ventures the opinion, "That if the last-estimated force be prolonged, it is hardly ever compatible with the life of the child or with the integrity of the mother's tissues;" adding, that "the conclusion is inevitable that by the conjoint use of two very nearly equal forces,—viz., that of supra-pubic pressure by the hands of an assistant, and that of traction on the body of the child—by the physician, there can be *safely* brought to bear upon the hind-coming head an extractive force fully as great as that by the forceps on the fore-coming head."

That a force of 225 pounds may be brought to bear upon the child's head by the forceps is a possible problem; and as Dr. Goodell positively asserts that he and an assistant, by the conjoint use of supra-pubic pressure and traction on the body of the child, have together exerted a force nearly equal to this, "certainly not less than 200 pounds," it does not become me to question the statement; but that it can be done with safety to the child I am incapable of believing. He then refers to Meigs, as having thrown his greatest strength upon the head of a child which had been perforated without breaking its neck; and Dr. R. Stewart, who twisted a towel around the neck of the fœtus, by means of which he and an assistant used their utmost traction-force—certainly more than 200 pounds—upon the neck without breaking it; but he does not give the history of the case in which Dr. Stewart, by his unaided efforts, did break the neck of a child, or that of Dr. J. Eshleman, who declared in this hall that he had broken the neck of a dead child with a traction-force of less than 100 pounds.

Dr. Goodell also quotes Hodge thus:

"It would be very easy from the records of the profession to detail the terrible results of forcible traction upon the limbs and body of the child when such traction was made not at the proper time or in the proper direction,—when brute force has been substituted for art and science. Perhaps there are but few physicians who have not seen or heard of cases where the strength of two individuals" (Dr. Hodge does not call them physicians) "has been applied to the body of the child, while that of three, four, or even more attendants to the body of the mother to accomplish the delivery of the head after the body has been born. That the child should ever escape with its life under such circumstances is surprising." "Thus," Dr. Goodell remarks, "six, and even more persons pulling away at mother and child, and yet, as Hodge clearly implies, the child has escaped with its life." Now, gen-

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tlemen, if by this quotation Dr. Goodell has led you to believe that this great conservator of orthodox obstetricy sanctioned, recommended, or in any way countenanced such a proceeding as just narrated, let me give you the closing paragraph of Dr. Hodge's statement. It is this: "But it is not to be wondered at that the spinal marrow has been fatally injured, that the spine itself has been dislocated or even fractured, that the limbs have been torn off, or that in some unfortunate cases the body of the child has indeed been delivered, but the head remained impacted in the strait of the pelvis. Surely, in the present state of our science, such practice is exceedingly reprehensible, not to say positively criminal."

Dr. Goodell also suggests that "the harrowing scenes at the scaffold when the rope snaps, or the prolonged struggle when the neck is unbroken, show conclusively that no *amount of traction, per se*, without twisting, will destroy life unless the spinal column yields."

Notwithstanding this pleasing picture, and the comforting assurance of Dr. Goodell that the neck may not break, I believe few men receive the noose with pleasure. To further prove the tensile strength of the child's neck, he says (*Med. Times*, March 20, 1875): "I once saw the strength of the child's neck put to a crucial test, and the result amazed me. I frankly confess that had I not been an eye-witness I should have been a doubter. It was a case of primipara with a flat pelvis and a large but putrid fœtus. After craniotomy had been performed, a further obstruction to delivery lay in the bloated chest and belly. Before this second complication was recognized, each one of four physicians present, including myself, took *his turn* at the forceps. From a natural rivalry, the traction thus necessarily made upon the neck of the fœtus by three of us in succession was no child's play. But that made by the fourth gentleman, a distinguished member of this society, exhibited so much power and originality that I shall here describe it. He turned the woman over on her side, brought her hips to the edge of the bed, and applied Hodge's forceps. He next carefully tucked a sheet around the back of the instrument, removed his shoes, sat in a chair, and placed one foot across the perineum, the other across the vulva. He then grasped the handles, straightened out his body, and pulled with all his might and main, making every muscle of his body quiver with the effort. Yet, in spite of the enormous strain brought to bear upon the neck of the child, it was simply lengthened out, but not broken." The fate of the child in this case was defined,—that of the mother was not given. It is not surprising that Dr. Goodell required ocular demonstration to credit so revolting a scene.

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I hope he does not recommend this as a rule in practice. I also hope the case narrated may have a *lasting isolation* in the annals of clinical obstetrics. Dr. Goodell also says he has repeatedly put a force of 130 lbs. upon the neck of an unborn child without injury to it, and that he put this force upon the neck of a child at eight months and four days of gestation, and brought it away alive.

J. Matthews Duncan ("Mechanism of Natural and Morbid Parturition," p. 86) asserts that "the great majority of labors are completed by a propelling force not exceeding 40 lbs., and that in very easy labors, the mother being in a favorable position, the weight of the child is enough to bring it into the world." He says: "I do not deny that in *very rare cases* a force of 100 lbs. may be produced, but I am sure that it is nearer the truth to estimate the *maximum* expulsive power of labor (including with the uterine contractions the assistant expulsive effort) as not exceeding 80 lbs." (p. 136 and 137).

Let me read you the results of his experiments to ascertain the power of resistance of the child's neck:

Case 1. A fresh female fœtus weighing 5 lbs. 6 oz., length 18 inches; spinal column gave way at 90 lbs.; decapitation took place at 118 lbs.

Case 2. A fresh female fœtus weighing 7 lbs. 7 oz., length 22 inches; spinal column gave way at 120 lbs.; decapitation took place at 141 lbs.

Case 3. A fresh female fœtus weighing 8 lb. 15 oz., length 23 inches; spinal column gave way at 122 lbs.; decapitation took place at 136 lbs.

Case 4. A fresh female fœtus weighing 5 lbs. 12 oz., length 21 inches; spinal column gave way at 91 lbs.; decapitation took place at 91 lbs.

The average dissevering or decapitation force in these experiments was about 120 lbs. He says if we are to avoid premature decapitation, the force should not exceed 100 lbs.

Dr. Cleveland has given me the particulars of the following case: Barbara H., a German woman, dwarfish in stature, aged 26, stout, rachitic, fell in labor at term, Jan. 17, 1868, of her first pregnancy. The vertex presented to the right ilium; the head rested above the brim; cord prolapsed; patient was placed in the knee-elbow position. With the escape of the amniotic fluid the cord again dropped down; the os was fully dilated; version and extraction of the fœtus were at once attempted. There was some little delay in bringing the head down, and it was accompanied with a *snapping* sound, distinctly audible to the bystanders. The child was still-born; laceration had occurred between the third and fourth cervical

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vertebræ; a force much less than 100 lbs. was used in this case; the pelvis was but slightly contracted, as the promontory could not be touched with the index-finger.

I again refer to the previously-given table of W. H. Jones, which gives five cases of decapitation, and to Dr. Goodell (Clin. Mem.), in which he states that he has succeeded in breaking the neck of the child. In the Reply, Dr. Goodell quotes as follows: "J. M. Duncan has shown that after the neck of an infant has been broken it takes from fifteen to twenty pounds more before the head parts from the body. Accepting these data, the conclusion is logical that a living child may be born if the traction power has not reached to within fifteen or twenty pounds of the decapitating limit." He here makes the bold assertion that we may make a traction upon the child's neck up to the luxation point, and yet not destroy the child.

In the *Phila. Med. Times*, March, 1875, he uses the following language: "Far better it is in these emergencies to *kill* in attempting to save than to *kill* by cowardly inaction." This is an expression I very much regret to see in a medical journal. There are probably few physicians that have not been appealed to to terminate the suffering of some hopelessly ill and suffering creature; and it may be possible physicians have sometimes done so. Quite recently the fashionable town was all agog because a physician said to the wife of his patient, "Madam, your husband is dying; let me give him a hypodermic and end his suffering." The wife, horrified at the suggestion, sent for another physician, and the gentleman lived for several months. This appeal has been made to me several times. The fashionable woman who does not wish a larger family will say, when pregnant, "Doctor, if you don't relieve me, I will kill myself." The poor wretch who, deceived, dishonored, abandoned, stricken with poverty and impending starvation, destroys her infant (upon the apparently humane idea of saving it from the more lingering, but no less certain, starvation), is condemned as a criminal according to the law of the land. Yet Dr. Goodell publishes that, for a condition, it is "*far better to kill.*" Shall any man take unto himself the prerogative to kill? Hearken to the great eternal lawgiver who saith, "Thou shalt not kill."

To recapitulate:

1. In contracted pelves the narrowing is more frequent at the brim than it is in all other varieties of distortions.

2. The narrowing rarely reaches a minimum of three inches.

3. The contraction is unsymmetrical.

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4. It is marginal in character.

5. In pelves contracted at the brim the head presents transversely.

6. As a rule, the vertex, when not interfered with, points to the larger lateral side of the opening.

7. When the case is left to the natural efforts, the head is moulded and flexed so that the greatest conjugate (biparietal) diameter enters the brim and descends to the side of the minimum point of narrowing in the pelvic opening, and therefore the head is nipped in its descent by the narrow point (stricture) of the pelvis in advance of the biparietal diameter. And the greater the flexion of the head, the further anteriorly will the head be nipped.

8. By adjusting the forceps to the sides of the head we simply aid these natural forces.

9. The traction force by the forceps need rarely exceed 40 or 50 lbs.; frequently 25 or 30 lbs. will be sufficient.

10. Cephalic labors are less dangerous to the child than pelvic labors.

11. In forceps deliveries the mother's tissues should not be injured.

12. Through pelves of +3 or 3½ inches, as a rule, the child can be safely delivered.

13. With a pelvis of 3 inches the labor may be spontaneous; generally, artificial labor will be required. Usually the labor can be terminated by the forceps without injury to the mother, and frequently with safety to the child.

14. Artificial assistance should be rendered as soon as the tissues are in a sufficiently dilated condition and it is ascertained that the woman cannot accomplish her task; before she falls into a state of exhaustion, and before the head of the child is jammed into and locked in the pelvic opening.

FELT CLOTH.

Dr. E. Wilson exhibited a specimen of exfoliated cuticle of nearly the entire hand, which came away in one piece, from a case of scarlet fever.

Dr. A. H. Smith asked whether it was a case of the vesicular form of scarlatina. The most marked case of exfoliation he had seen was of that character.

CYSTIC TUMOR OF THE OVARY.

Dr. Savery presented an ovarian cystic tumor, removed from the right side of a patient, aged 58 years. The tumor had existed for five years, but had increased very much in the

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last two years. It consisted of a large cyst, with several smaller ones. Its entire weight with contents was thirty-seven pounds; weight of tumor alone, one and three-quarter pounds; the amount of liquid was fifteen quarts.

The patient required nourishment by enemata, on account of the irritable condition of the stomach. She sank rapidly, and died of exhaustion three days after the operation, which was performed by Dr. Washington L. Atlee.

Dr. R. Stewart read the following paper on

THE COMPARATIVE MERITS OF CEPHALIC AND PODALIC (OR VERTEX-FIRST AND VERTEX-LAST) DELIVERIES THROUGH PELVES NARROWED IN THE CONJUGATE DIAMETER.

Mr. President: In the beginning of this discussion at our April meeting, I endeavored to show that the head of the infant in pelves contracted in the conjugate diameter, should be placed and kept in the transverse position. I also then drew some comparisons between the two modes of delivery, and at the May meeting, I showed on the pelvis the position the forceps should take, if the head is held transverse; and the mode of applying them when the presentations are occipito-posterior. I propose this evening to summarize what I have thus already stated, and in an unbiased manner to examine the comparative merits of cephalic and podalic, or vertex-first and vertex-last deliveries, through pelves narrowed in the conjugate diameter. If my conclusions do not coincide in all respects with either of those who have taken so active a part in the argument, I hope, in what follows, sufficient cause will be assigned for such disagreement.

It would, at first thought, appear strange that any difference of opinion should exist in a matter involving so much of purely mechanical principles, as that of the delivery of the body of a child through the pelvic channel; yet, difference in practical experience, preconceived opinions, fear of making innovations on established teachings, and hesitancy upon entering avenues differing from those in which we have previously travelled, all combine to keep us from independence of thought and action.

In examining a question, the answer to which involves the life of a child, and perhaps that of a mother, let us compare delivery by forceps, vertex-first, with delivery by turning, vertex-last, and thus ascertain whether there are not valid reasons for believing that in certain cases delivering by turning will be preferable to, and more successful than delivery by means of the forceps. What is the cause of the narrowing of the conjugate diameter of the superior strait, as usually found in practice? It is due to the encroachment of the promontory of the

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sacrum on the pelvic brim; or, in some rare instances, to the projecting forward and downward of the lower lumbar vertebræ; or, the symphysis pubis may bend inward and backward, or have an enlargement thereon. The promontory may be projected forward, or be abnormally increased in size altogether, or at some particular point, and also be located more to one side of the brim than to the other, thus not only narrowing the antero-posterior diameter, but to a certain degree lessening that side upon which it is located. The effect of such condition or conditions, is to cause the vertex to assume a different position from what it would in a normal strait. Thus, supposing the position of the body of the infant to be that appropriate to a left occipito-anterior position of the head, any one of the above conditions may force the head either too nearly to an occipito-anterior position, or even make it present as a left occipito-posterior. If the prominence be more toward the right of the pelvis, the left side of the strait then being the larger, the occiput will be pressed back toward the left iliac junction, thus causing it to assume a left occipito-posterior position; the body meanwhile still being as if the head presented in the left occipito-anterior. So, by the prominence being more to the left, a right occipito-anterior position may be converted into a right occipito-posterior, the body being yet as if the head were still in the right occipito-anterior. The latter condition of the superior strait would tend, in like manner, to make an existing left occipito-anterior position tilt more toward an occipito-anterior; but in all these cases the head tends to present obliquely. In order that the narrowest diameter of the child's head may pass through the narrowest diameter of the superior strait, the head must be in a transverse position. If the occiput has passed to the left sacro-iliac junction, it must be rotated forwards, until it is nearly opposite the left acetabulum. If it be already toward the symphysis, it must be rotated backward toward the sacro-iliac junction until again opposite to, or slightly beyond, the left acetabulum. The head must be held in this position in order to engage or to pass the obstructing point. At this period, if the forceps are to be applied, they must either be applied with the concavity of the handles looking upwards to the symphysis pubis—thus making the blades lie the one on the occiput and the other on the forehead, or they must be applied with the concavity looking toward the acetabulum—thus making the blades lie on the sides of the head. In the former position, which is the method taught and practised by the continental authorities, compression lessens the occipito-frontal, and thereby increases the biparietal diameter, thus adding to, instead of diminishing the diameter which must

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pass the narrowed conjugate of the superior strait. This of necessity augments the difficulty to be encountered, and may result in the disfigurement or the destruction of the child. Furthermore, after passing the superior strait, traction cannot be continued long, for the head should not pass through the inferior strait in this position, but must be revolved upward toward the symphysis. This, if done with the instruments still on the head in the occipito-frontal diameter, would make the blades issue from the inferior strait in a line transverse to the vaginal orifice, the concavity of the handles then looking toward the acetabulum. Therefore, in such cases it necessitates the removal and replacing of the instruments after passing the superior strait. Apart from the tractile force used, nothing is gained by such an application of the forceps. On the contrary, a loss ensues, because, just in proportion to the power applied is there a diminution of the occipito-frontal, which has plenty of room in the transverse diameter of the pelvis, and which should be lengthened out so as to allow the biparietal diameter to become shorter; it also increases the biparietal, which should be diminished in order that it may pass through the smaller diameter of the strait. Notwithstanding the instructions of the past, however wise may have been the teachers, we must affirm that this mode of practice is incorrect. The other method of application is the one which should be adopted. That is, the blades should be applied to the sides of the head; the concavity of the handles will then be slightly posterior to and look upward towards the acetabulum whilst making the traction through the superior strait. Thus, if the head present in the left occipito-anterior position, then to keep the head transverse and to give facility for traction, the woman should lie on her right side, when, if the forceps are applied on the sides of the head and the head to be held in the transverse diameter, the concavity on the handles will, during the traction, be upward and slightly posterior to the left acetabulum (*Fig.* 1), and when the superior strait is passed, the

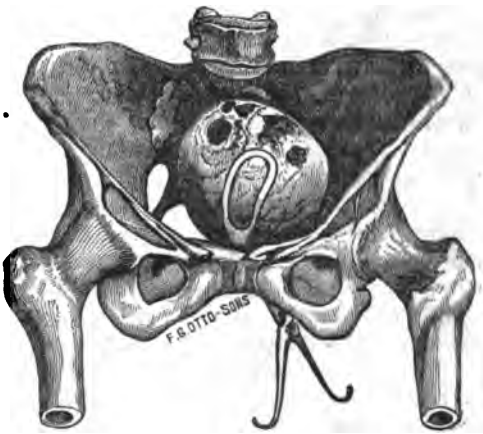

Fig. 1.

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handles will be gradually turned toward the symphysis pubis, thus bringing the head in the position requisite to pass through the inferior strait. When the head emerges, the blades still being at the sides, no change is required, and whatever power is necessary to help turn or revolve the head, is obtained by this use of the forceps.

What changes are thus produced? The force applied diminishes the biparietal diameter and increases the occipito-frontal, which is the one having the most room for exit. In this manner the diameter having the least room to pass is diminished, and the one having the most room is increased. The child is not disfigured, there is less danger to the soft parts of the mother, and the forceps guide and revolve, as well as withdraw, the head through the channel.

The handles undoubtedly occupy an awkward position in the beginning, especially if the forceps are applied before the head has assumed the transverse position, and by the irregularity of the strait has been forced to present in a left occipito-posterior instead of a left occipito-anterior position, or a right occipito-posterior instead of a right occipito-anterior. The concavity of the handles will then look towards the sacro-iliac junction, but by means of the forceps the head is readily revolved into the transverse diameter of the superior strait. It is in these cases, in which the position of the body does not correspond with the position of the vertex, that, if not correctly diagnosed, traction may be made injudiciously. The body being grasped by a firmly contracting uterus is forced downward, in such a manner as would keep the occiput, were it free, to the symphysis; but the operator who supposes the position to be an ordinary occipito-posterior one, applies the forceps and endeavors to revolve the forehead under the symphysis. If successful in this attempt, the face would be made to look to the abdomen of the mother, but the uterus holding the body fast, would tend to keep it with its back to the abdomen. The neck would run a very fair risk of being twisted to the extent of a semicircle, and the child's life would be endangered. The same danger may arise if one side of the pelvis is larger than the other; for, if the occiput is on the left side of the pelvis, and the right side is the larger, then the occiput should be turned to the right side. To turn it from one side to the other, unless done early, either before or immediately after the membranes are ruptured, may be difficult or impossible.

The forceps having been applied to the sides of the head, it must be compressed to the extent of the thickness of the blades before using traction. An additional power must also be exerted equivalent to that power of the uterus, which, by

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propelling the body and the head in a different direction from the one it must take to be delivered, is lost in consequence of the head being held transversely. Besides the difficulty in applying the forceps, there is a loss occasioned by the position the uterus must take. The axis of the uterus, in a normal pelvis, is a line perpendicular to the plane, and passing through the centre of the strait. Any protuberance or projection of the promontory makes a new centre nearer to the symphysis pubis. The uterus no longer exerts its propelling force in a perpendicular direction to this plane, but pushes the head against the pubis; or, in other words, propels the head through the strait at an angle, instead of perpendicularly, the head striking against the pubis, and then slanting back towards the sacrum. Whatever loss is thus occasioned must be made up by traction, before any power is really gained to bring the head through the contracted portion. The tractile and compressing power now being brought into exercise, it is held that time can thus be taken alternately to draw upon, and then relax our grasp, according to the contractions of the uterus, and that thus, by a slow, and, it may be, tedious process, the head will be drawn out or lengthened, so as to pass the nipping points. The amount of compression a child's head can endure is easily ascertained by the craniometer—to which reference will be made hereafter—varying from zero to one and one-quarter inches diminution of the biparietal diameter, the difference in amount being due to the extent of the ossification of the sutures. As the result of compression, I have seen the child's eyes protruded, like a frog's, from the sockets, and the head drawn out like a cone, and yet the child has survived. With this great advantage of having time during which we may extend the head, there is danger, by too long continued compression of the cranium, of destroying the child's life; and by too long continued traction against the soft parts of the mother of injuring them, besides that of producing vesical troubles. That under the writer's observation there have been cases of great sloughing, and in one case absolute destruction of a portion of the walls of the bladder, may perhaps only be cited as an improper use of the forceps, and therefore not to be considered in the argument. Yet these effects may and frequently do follow, to a greater or less degree. The head, having passed the narrow diameter of the superior strait, is checked in its onward progress by the shoulders and the chest, which meet the same obstacle as did the head. Therefore the forceps are again needed to help draw the shoulders through. In thus drawing on the forceps, perhaps it has not occurred to us that we, in reality, are now drawing on the neck, and that whatever resisting power has thus to be

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overcome is entirely sustained by it. After all this effort, how often do we find the child still, its life having been destroyed by compression of the brain, or injury to the spinal cord, and the case terminating with a bad "getting up" on the part of the mother.

Suppose, however, that after having made traction, we are satisfied the head will not pass without being reduced in size, or have reason to believe that the child is dead, then there will be no impediment to the performance of craniotomy, which is one of the greatest advantages claimed for vertex first delivery through a contracted conjugate diameter.

Let us now in the same manner examine the process of delivery by turning or vertex-last. As a general fact, I think none will deny that where necessity has compelled turning from causes other than the one under consideration, or in breech presentations after the shoulders have emerged, the head, usually with great rapidity, passes through the superior strait, and at once is found pressing against the inferior outlet—and that too with those, who in other labors, are slow in having the head delivered. But in the cases under consideration, the first difficulty that may present itself will be the act of turning, especially if the water has all been evacuated and the uterus is firmly contracted on the child. There is then the further probability that in withdrawing the shoulders the uterus will strip the arms over the head of the infant. This will certainly be the result if done rapidly, instead of leaving the propulsion of the shoulders through the os uteri to the slow but firmly contracting and propelling power of the uterus. There is the further danger in this case of injury to the mother, although all of us can probably call to mind instances where turning has been accomplished with the greatest difficulty, and yet unattended by any evil effects to the mother. The turning, then, to be easily and safely accomplished, should be resorted to early, and slowly performed, the head and the shoulders being left as much as possible to the efforts of the uterus.

The shoulders having passed the superior strait, and the arms being withdrawn, the head will at once, on traction being made, or by the uterine power alone, fall into the strait in the transverse position, because the smaller diameter of the head comes first, and therefore drops into the narrow conjugate diameter of the pelvis. There is no force acting in any manner to change this position; but it is at once assumed, and the uterine force and the tractile power all combine to keep it in this transverse diameter; and if one side of the pelvis be larger than the other, we can so turn as to bring the occiput in the larger side.

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In the meantime what is the condition of the uterus? Having been relieved of a portion of its contents, it has room to contract perpendicularly upon the head, and loses none of its force because it does not propel the head through at an angle. It contracts more forcibly than it did in the beginning. There being no blades applied to the head, and consequently no increased diameter, no compression is now required to lessen it; nor is any tractile power required to substitute lost or insufficient uterine force. There is, furthermore, the facility for useing the same amount of tractile power by drawing on the shoulders and neck that there was in vertex-first when using the forceps. The neck, as has been already stated, in vertex-first deliveries, often endures a very large force required to draw the shoulders through, and why can it not endure the same force, if required, to draw the head through? The amount of traction that can be safely applied, Dr. Goodell has tested practically; and I can bear testimony that on one occasion, after having removed a great portion of the cranium of an infant and finding the shoulders apparently unable to pass the superior strait, one physician grasped the face and the remnant of the head, while another pulled upon a towel tied around its neck. These two, bracing themselves as best they could, used their combined strength to aid me in removing the shoulders, and yet the neck was *not* broken. If the neck of a dead infant will withstand such a force, will not that of a living one, whose tissues possess the power of contractility, endure as much? Although in a similar case the neck *was* broken, and though the force required to bring the shoulders through may not be as great as that required to bring the head through, yet at all events we must concede that the same amount can be as safely used, as can be by the forceps, in drawing on the head to withdraw the shoulders, when they are held in the superior strait.

Another power can now be brought into very successful operation—that is, pressure through the abdominal parietes on the contracting uterus. This not only aids by increasing the uterine contractions, and thus gaining more active propelling power, but in another most important manner, viz.:

When the head reaches the narrow conjugate, traction on the body and neck will cause extension of the head, the nipping points will thus be made to catch the diameter of the child's head about the parieto-temporal junction. Now, while the operator holds the body firmly, and steadily draws upon it, let the assistant, acting from above, cause flexion to take place. This is the same as making the *nipped* points descend downwards in the arc of a circle whose centre is the occiput, and just so far

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in the arc as this movement continues, just so far will the nipped points have moved through the narrow outlet. This distance will be represented by a line going from the points first nipped, *upwards* and *backwards* on the child's head. The assistant now holding and pressing upon the forehead, so as to keep the chin immovable, let the operator draw steadily downwards, and the assistant also press upon the occiput, in order to again produce extension of the head. This will now cause the nipped points to move in the arc of a circle, of which the *chin* is the centre, and the effect will be to move the nipped points through the constricting outlet, a distance represented by a line, or an arc *upwards* and *forwards* on the child's head, and thus, by alternately producing extension and flexion, without the terrible amount of pulling with which this mode of delivery is charged, will the head be *pushed* through the contracted part. If the representation were diagramatically made, the course taken by the nipped points through this lever motion would not incorrectly be represented by curved zigzag lines, first upwards and *backwards*, then upwards and *forwards*. This any one can try on his own head; let him place his forefingers, one on either side of the head about the squamous suture, and let the head be extended, then holding the fingers stationary, move the head or face downwards, *i.e.*, flex the head, and he will find the head has passed itself through the pressing fingers. In this trial, the fingers represent the pelvis, and the same motion produced on the child's head will have the same effect as regards the pelvis that the motion did on the points of the fingers on the side of the head. Besides, there is also now an entire freedom in the pelvis for the head to be moulded around the jutting promontory. In vertex-first, traction moulds by drawing out the head lengthwise. In vertex-last, it is by pressure on the side, and, as it were, indenting it, and nothing interferes; where, in vertex-first, the forceps, by compression, forces a moulding according to their position as applied. What disadvantage have we in this mode of delivery? After the head has reached the superior strait, the delivery must be rapid, because the uterus is contracting more forcibly, and on a smaller surface, and will therefore be more likely to separate the placenta, and thus destroy the child's life. The cord may be pressed upon and stop circulation; then there may be danger by pulling on the neck, particularly so if the neck be twisted. Then, again, the life may be lost at the perineum. I say may be, for this can

Fig. 2.

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rarely happen if the proper course be taken when the head has advanced that far.

As to vesical troubles, there will probably be less than in vertex-first deliveries, not because there is less pressure, but because it is not so long continued. It has been intimated that this is from the former cause, but we must admit that there being nothing between the side of the head and the symphysis, whatever power is required to mould the sacral side of the head around the promontory, must be resisted by the same power on the pubic side, otherwise there would be no moulding or indenting. In vertex-first, the blades, by compressing the sides of the head, tend to relieve the pressure on the urethra, and theoretically, so far as this argument goes, would result in less vesical trouble; but, as stated, it is the continuance of pressure that paralyses the muscles. Besides, in some pelves, just at the symphysis, there appears to be a widening out of the pubes, making a small and almost acute angle, in which the urethra is safe from pressure, even if long continued.

The last source of danger is the uncertainty of successfully withdrawing the child alive, and the greater difficulty that may be experienced in performing craniotomy, especially if the shoulders should be large and the inferior outlet small. I know of an instance where the neck was twisted off, leaving the head in the uterus, and of another in which the mother expired even before the shoulders had been delivered through the strait. Cases may occur, then, in which, after turning, the chest must first be opened and then craniotomy performed, in order to remove the child.

COMPARISON BY ANTITHESIS.

Vertex-first.	*Vertex-last.*
The head may be in a wrong position, which must be changed.	The head at once assumes the correct position.
If the occiput is on the smaller side of the pelvis, it is hard to rotate.	The difficulty is slight.
Difficulty in applying the forceps.	The forceps not required.
Must make compression equal to the space taken up by the blades.	Compression is unnecessary.
Loss of propulsive force which is directed at an angle to the superior strait.	This force, being applied in a line perpendicular to the strait, no loss occurs, and the uterine contractions are stronger.

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Traction must compensate for this loss.	No compensation required.
Long continued pressure may produce vesical troubles, and injure the tissues.	Delivery is necessarily rapid and therefore these dangers are not so great.
Have time for traction.	Have not, or will lose the child.
The forceps allowing unlimited tractile power to be used, the child's life is endangered by compression, of the brain, etc.	Being able to exercise the same power by drawing upon the neck, like results may follow.
Traction is readily made.	Traction is more difficult.
Have but little power applied from above.	By pressure a force can be exerted upon the abdomen equal to the tractile power.
The head cannot be moved except by the use of the forceps.	By alternately flexing and extending the head, it can be made to pass the constricting points.
Craniotomy may be readily performed.	This operation may be very difficult.
No danger of irritating the uterus.	In turning there is this danger.
No danger to be apprehended from pressure on the cord.	There is danger unless the delivery be rapid.
The placenta will not be detached before delivery of the head.	The child's life may be lost from this cause.

Of these comparisons nine are favorable to the method of delivering the vertex last, and six to that of the vertex first. If turning is performed early, the danger of irritating the uterus is, to a certain extent, avoided. The dangers from pressure are proportionate to the amount and continuation of the force employed in making traction, and the circulation in the cord may be interrupted if the size of the pelvis will not admit of the cord lying along the spine. There remain unfavorable to vertex-last the necessity for rapid delivery of the head, after the shoulders have passed the strait, on account of the probable separation of the placenta; the danger from drawing irregularly upon or twisting of the neck, and finally the difficulty that may be experienced if required to perform craniotomy. The object of all manipulation is to deliver a *living* child, and if there is no hope of this, our duty to the mother and the child requires us to resort to craniotomy, which, if done early, may be readily

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and safely performed. I say safely, having performed this operation a great many times without a bad symptom resulting.

How are we to know that turning will be more favorable to the child? There are two unknown quantities, one the length of the conjugate diameter of the superior strait, the other the biparietal diameter of the child's head. Knowing the conjugate to be small, will this knowledge alone warrant us in turning? Perhaps the head is unusually large, and if so we may add danger to the mother, and be obliged to open the chest of the child, as well as to perforate and crush its head, before delivery can be accomplished. In other words, there is a certain relationship between the size of the pelvis and that of the head which necessitates the death of the infant; and how are we to know when this relationship exists? Does it follow that a conjugate of four and a half inches will always allow a living child to pass, or, that one of two and three-quarters will always prevent one from passing? I recently delivered a child at full time, whose measurement by the craniometer was three inches, easily reduced to two and three-quarters, and by harder pressure could be reduced to two and five-eighths inches. Another, where the head before and after birth measured two and thirteen-sixteenths inches, which had, by lying in a wrong position, retarded a labor for hours. The pains and bearing down efforts were of the most rapid and forcible character, and the pelvis so large that in all previous births the child was born before the physician arrived. This child's head could have been extracted easily through a conjugate of two and three-quarter inches, and with difficulty through one of two and a half. We must then, in addition to the size of the conjugate diameter, ascertain that of the child's head. This is accomplished by having placed on one of the handles of the forceps a bar three inches long, so divided as that when the handles are separated the divisions on the bar will represent the extent of the separation of the blades when they are applied to the sides of the child's head. By means of this craniometer one can very accurately measure the biparietal diameter of the head, and the conjugate being known, a reasonable conclusion can be formed as to the probability of a successful delivery by turning. We must likewise take into consideration the size of the inferior outlet of the pelvis, which will also determine the difficulty or ease of performing craniotomy, if this operation should become necessary. As an instance, a few months ago I was prompted to turn and attempt delivery, when

Fig. 3.

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I found that it could not be accomplished by the use of the forceps; but on measuring the head with this craniometer, I found the biparietal diameter was four and five-eighths inches; the conjugate diameter of the superior strait was less than three and a half inches. I also found that I was unable, by all the compressing force I could exert, to reduce the diameter of the head to less than four and one-eighth inches. The inferior strait was narrow, the pubic rami forming an acute angle. I therefore perforated the head, and after very great difficulty, during which the neck was broken, delivered the child. Upon making measurements of the child after it was delivered, I was fully satisfied that turning would have involved craniotomy at last. The relative size of the head and pelvis being known, and the difference after compressing the head being slight, will not the chances of delivering a living child be more favorable by turning? They certainly will be, if the forceps are not applied to the sides of the head and injudicious traction is made. There is not a practitioner of extensive obstetrical experience who has not met with difficult deliveries, produced by the head having been embraced by the blades in such a manner as did not bring its diameters in correlation with the diameters of the pelvis. And how often are the forceps applied without any definite idea of their position, except that the handles shall lock. Suppose, in the case of a projecting promontory, the forceps should be applied to the sides of the head, and traction be made with the concavity of the handles looking up towards the symphysis, how, under these circumstances, could the head be delivered? The forehead would come down directly upon the jutting point of the promontory, and before the head could pass it would be indented or crushed. To a degree the same effect must result if the head were drawn upon while in the left occipito-anterior position. (*Fig.* 4.) Although in such cases traction for hours be unavailingly made, and though

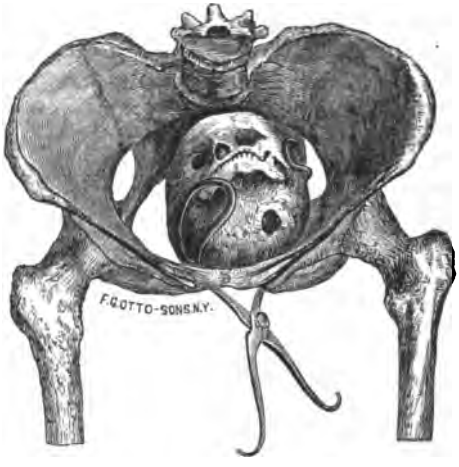

Fig. 4.

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turning would accomplish our object, yet, it might also be attained by making traction in a proper manner; and success by turning *does not*, in such cases, prove its superiority over the delivery by the forceps, but only proves that *traction* was *improperly* made. If, then, the choice is between turning and an uncertain application of the forceps, to be followed by improper traction, we must concede the chances are more favorable in vertex-last than vertex-first deliveries. But supposing the forceps are on the sides of the head, which is in a transverse position, and that the *same points* are impinged upon by the contracted conjugate diameter as would be if we had turned the child, and the vertex come last: will not the delivery be as effective, safe, and easy with the vertex first, assisted by the forceps, as it would be by turning? If the head be impinged upon at the same points, can we not pull it through more readily by means of the forceps than by turning and pulling upon the neck and body of the child whilst we are aided by pressure made from above? To this, I think, I must reply in the affirmative. But if the occiput lies on the smaller side of the pelvis and cannot be rotated, then, the occiput being pushed nearer to the conjugate diameter, the impinging points will be moved further towards the vertex, and therefore to a larger diameter of the head. In this case, even if the forceps are applied correctly, and traction be properly made, the same diameter of the head *not* passing through the contracted conjugate of the pelvis, there cannot be the same facility in withdrawing in vertex-first as if the head was turned and drawn down so as to bring the occiput to the larger side of the pelvis.

We must therefore conclude that whenever, by carefully ascertaining the size of the head and pelvis, there is a reasonable hope that a *viable* child can be delivered, and especially when, with this, the head lies with the occiput on the smaller side of the pelvis and cannot be changed, and if a judicious trial with the forceps has proved unsuccessful,—delivery should be attempted by turning. But to make this operation efficacious, we should turn the child so that the occiput will be brought to the larger side of the pelvic brim; and before making this attempt it must be ascertained whether the inferior outlet is of such a capacity as to render craniotomy practicable should it be found necessary to resort to it.

How long shall we wait before determining upon this mode of delivery? Time is an uncertain element in such calculations. Measurements must influence us greatly in deciding the case. I have perforated the head after waiting but a few minutes, and yet have waited hours upon a hard but eventually safe delivery. In general, for reasons already given, turning,

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to be done easily and with safety to the mother, should be done early.

When the height of the head above the parietal protuberance is not very great, I have delivered by keeping the head transverse, raising the vertex and turning the forehead downwards. This makes the sides of the head, just above the ears, slide through the narrow conjugate. After passing the superior strait, if the inferior pelvis be large, we can revolve the vertex under the symphysis. In turning, we endeavor to cause a portion of the sides of the head to pass somewhat in the same lines as if the forehead descended first; but if the forehead comes first, we have many of the advantages, and yet avoid all the dangers attendant upon turning.

Stated Meeting, Thursday, November 4th.

The Vice-President, Dr. John S. Parry, in the Chair.

URETHRAL TUMOR.

Dr. William Goodell reported the case of a woman with a painful urethral tumor, which bled at the slightest touch. He exhibited the tumor, which was as large as a walnut. The examination gave rise to so much hemorrhage that the woman became blanched, and he was obliged to staunch it by the application of Monsel's solution. He found that the tumor sprang from the lower two-thirds of the urethra, which was elongated and greatly dilated. He removed it by the galvano-cautery. It seemed impossible that the tumor could be a caruncle. It was dense and looked like a malignant growth.

It had been two years in growing. The woman had passed the climacteric.

Dr. Ludlow asked the experience of the members in regard to urethral caruncles.

He had found the only method of treatment which was permanent in effect was that of excision of the tumor and searing the point of attachment with red-hot needles, etc., combined with the use of Monsel's solution, when necessary to check bleeding. He had used nitric, carbolic, and chromic acids, acid nitrate of mercury, etc., without permanent benefit. He recommended as useful in some cases an ointment of arsenious acid, three grains, and iodine, five grains to the half ounce of lard.

Dr. William Goodell remarked that the only certainty in the destruction of these caruncles was by the use of the galvano-cautery, or the red-hot irons to the raw surface. Fuming nitric acid sometimes acts very well.

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SUDDEN EFFUSION OF BLOOD INTO THE LABIA OF PREGNANT WOMEN BEFORE LABOR.

Dr. J. V. Ingham reported two cases of sudden effusion of blood into the labia of pregnant women occurring before labor, and without any evidence of direct violence. The first case which he saw, about four years ago, had the following history: A young married woman, 25 years of age, was five months advanced in her second pregnancy. One evening while walking across the floor she tripped, but was caught by her husband, however, before she fell. At the moment of tripping she was conscious of a sudden, sharp, lancinating pain in her external genitals. This pain was so acute that she was unable to walk up-stairs to her bedroom. He was at once sent for, and when he reached the house, not more than twenty minutes after the occurrence, found her lying upon the floor, with her legs widely separated, and evidently in great pain.

On making an examination he found the left labium enlarged almost to the size of an orange, livid in color, and so exquisitely sensitive that the slightest touch was unbearable. Ether was sent for, and nearly ten ounces were administered without producing unconsciousness. He was, however, able to introduce his finger, part the tumor, and ascertain that it had no connection with the vagina or abdominal cavity; that it was not a hernia, but an effusion of blood from a broken vessel. The patient was placed in bed, and cloths saturated with laudanum and lead-water were at once applied. The next morning the tumor was less painful; the dressing was changed to an evaporating solution. The tumor slowly contracted to the size of a walnut, when it opened and discharged about an ounce of a thick, fetid, and almost black fluid, and the labium regained its normal size. A week later the opening through which the discharge came had closed, when, while the woman was in the close stool, the labium again partly filled up. This was treated in the same way. Suppuration again occurred, and the labium resumed its normal size. She was delivered by Dr. Ingham, at the end of the full period of pregnancy, without any difficulty or any increase in the size of the labium.

The second case came to his notice about two weeks ago. A young woman, about 23 years of age, eight and a half months advanced in pregnancy, found one morning a lump in her right labium, about the size of a walnut. The night had been quiet; she had been unconscious of any injury or pain, and had slept alone. This tumor slowly increased in size and became so painful that when Dr. Ingham saw her, three days after the

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appearance of this trouble, she could hardly walk. The tumor was then about the size of a quarter section of an orange, and dark in color, though not so livid as in the previous case. A mixture of lead-water and laudanum was kept constantly applied with advantage for a few days, when she fell in labor. As the tumor then interfered with the passage of the child's head, it was opened, and the pus and decomposed blood escaped. The forceps were applied and the child safely delivered without a recurrence of the effusion.

In this case there was no subsequent recurrence of the effusion, the labium healing up during the lying-in period.

Dr. Ingham then stated that he would like to ask the other members of the Society if they had met with similar cases, and how were they in the habit of treating them? He would also like to ask if the immediate use of the knife to evacuate these tumors was advisable? and whether its use would not increase the liability of a second effusion of blood, similar to that which occurred in the first case after the suppuration. He was aware that the knife must be used to open these tumors when they occur during labor, but could find no authority advising its use before labor. He believed that this was a rare accident before labor, as the obstetrical and surgical authors make but slight allusions to it.

Dr. Ellwood Wilson remarked that he should not hesitate to make an incision on the vaginal surface of the tumor and let out the blood.

Dr. Ludlow asked whether the woman had been troubled with varicose veins.

Dr. Ingham replied that both patients were young women of 23 and 25 years respectively, and that there was no appearance of varicose veins.

Drs. Wilson and Ludlow cited cases of vaginal tumors composed of large masses of enlarged veins, but neither of them had ever seen cases similar to the ones reported by Dr. Ingham.

Dr. Jno. S. Parry related the case of a woman five months advanced in pregnancy, admitted to Blockley Hospital with a thrombu of the vulva. She was seized with a severe pain and started to walk to the hospital. On the way she experienced a sudden relief, and at the same time felt a warm fluid running down her limbs. There was found on examination a large cavity in the vulva, all the clots having escaped. It healed up entirely.

He believed that, in those cases in which the skin becomes livid and blue, the proper treatment is to open the thrombus, remove the clots, and arrest the hemorrhage.

He had seen a case of tumor of the anterior portion of the

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vagina of the size of an orange, made up of varicose veins entirely.

He had never seen any of these veins give way during labor.

He thought that he would not use the knife if there was any chance of absorption, but only where the tumor is livid and likely to burst.

BLIGHTED OVUM.

Dr. R. A. Cleemann exhibited an ovum with the following history:

About a year ago I presented to the Society a specimen of "vesical mole," hydatidiform degeneration of the chorion. I show now a blighted ovum undergoing the change which has suggested the name of "fleshy mole," apoplectic membranes.

I was called to the patient from whom it was expelled about two weeks ago. She was a young woman living with her husband and their child, an infant of two years of age, in a canal boat, on the Schuylkill. A murderous fight had occurred that day among some sailors of a neighboring vessel, which had caused her great alarm for her husband's safety, in consequence of which, as she herself supposed, she was seized with violent continuous pain in the lower part of the abdomen and with flooding. How much blood had been lost before my arrival I did not learn, but the woman's countenance was pale and anxious. She did not consider herself pregnant, as she believed her catamenia had been regular. I elicited by questioning, however, that she had missed a period four months before. Vaginal examination revealed the os uteri somewhat enlarged, softened, and patulous, and within a firm elastic mass: by counter pressure on the abdomen the size of the uterus was easily made out, about the dimensions of a large orange; *ballottement* furnished no evidence of the presence of a fœtus. Hemorrhage was not at the moment profuse, but intending to leave the patient, I stuffed the vagina with strips of cotton cloth smeared with lard—the best tampon at my disposal—and prescribed the wine of ergot. When I returned, after an absence of some hours, I learned that the pain had ceased about two hours after my departure, and I found in the vagina, behind the saturated tampon, an unruptured ovum.

In appearance this had reached, as you observe, three months of development; but incising the membranes, from which the inclosed liquid gushed with some force, I discovered a fœtus of only about five weeks' growth, since it was less than an inch in length and with the lower extremities represented as yet by single bud-like projections. The embryo hung by a somewhat

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translucent attachment, a little longer than itself, nearly as thick, and expanded at the placental end. The interior of the amniotic cavity presented the "tubercular" appearance, being scattered over with prominences of varying size, the "bosselures" of Velpeau: some of these were as large as filberts, and looked like venous varicosities; they, of course, add considerably to the thickness of the membranes. I have separated the amnion from the chorion at a translucent portion, and the deciduum from the edge of the farming placenta.

The inference drawn from the specimen is, that the fœtus perished at five weeks, from amniotic dropsy perhaps, but that the membranes not collapsing, their hold was sufficiently maintained upon the maternal tissues to furnish them the materials of growth: their little prominences are due to extravasations between them, the result of varying uterine pressure. The limit of retention within the womb was determined by the mental shock of the fright which induced reflex contractions of the uterus.

Dr. Jas. Tyson reported a somewhat similar case which had recently occurred in his practice. The fœtus had, however, entirely disappeared. The membranes were well developed and presented a normal appearance under the microscope.

Stated Meeting, Dec. 2d, 1875.

The President, Dr. A. H. Smith, *in the Chair.*

Dr. Wm. Goodell read some comments on Dr. Wilson's Papers on

VERSION IN CONTRACTED PELVES.

Paper V.

Mr. President and Gentlemen of the Philadelphia Obstetrical Society:—I am beginning to think with Newton, that "a man must either resolve to put out nothing new (I still venture to call my method *new*) or to become a slave to defend it." If, therefore, no other member of this Society is disposed to continue the discussion on my "*Clinical Memoir on Turning in Pelves Narrowed in the Conjugate Diameter*," I shall beg leave to offer a few remarks upon Dr. Ellwood Wilson's papers, read on the evenings of September 2d and October 7th. It was my purpose to have replied to them at the last meeting of this Society; but as I was not able to get all the necessary

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papers from Dr. Wilson until late on October 26th, I did not have time enough for this purpose.

And first, although, as pointed out by Dr. Wilson, my paper of June 3d was written with haste, I beg to say that its conclusions were the result of deliberate consideration, and that I have no wish to recall any portion of it. Let me also remind the Society that the question raised in my original memoir was not that of the merits of the obstetrical forceps—an instrument for which I profess admiration as great as that felt by any member of this Society, and which I constantly use—but that of the propriety of substituting for the use of the forceps the operation of version in certain special cases when the conjugate diameter is between 2.75 and 3.25 inches, and of resorting to version in cases of even less deformity, when the forceps has been tried and has failed. Had Dr. Wilson simply read over the final "Propositions" of my memoir, he would have seen that I am not amenable to the twice-repeated charge of advocating "the indiscriminate resort to version in coarctated pelves." Hence I am unmoved by his lengthy and instructive quotations from various authors in praise of the forceps,—praise which I am quite disposed to consider well deserved by that useful instrument.

A few points in Dr. Wilson's papers must now be adverted to, for, although he holds in this city a high rank as an obstetrician, he must, like other people, submit to have his assertions canvassed and corrected. The statements to which I shall refer have doubtless been made, partly from misapprehension, and partly from the lack of time to read attentively my papers and his own authorities. I regret that the exigencies of this debate have hindered him from having time enough for carefully examining my paper on "*Head-Last Labors*," and my "*Clinical Memoir*." These he had in his possession seven months only; and my *Reply* to his criticisms on both of these papers not more than four months. Had he not been greatly pressed by the shortness of this time, I feel assured that he would hardly have made it needful for me to make the following corrections:

1st. I have not denied, out, on the contrary, have affirmed that when left to itself the fœtal head will eventually dip in a narrow pelvis. But I have averred that when the narrowing is mainly limited to the conjugate, the head does not *tend* so to dip, and usually not until the fore-cone has by extension become engaged and fixed in the conjugate. That this mechanism is the true one is proved, not only by the well-known preliminary dip of the anterior fontanelle, but by the invariable site of the fracture or of the bending in of the cranial bones which in such unaided labors is found, not at one of the poles

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of the biparietal diameter, but in the fore part of the head, near the coronal suture. Further, I still hold that a prudent practitioner will, in such cases, usually deem it wise to come to the patient's relief before the final dip of the vertex takes place, although not ignoring, like Dr. Wilson, the resources of nature to the extent of applying the forceps before the membranes are broken.

In this relation, let me ask Dr. Wilson to be good enough to tell us whether, in default of accepting the above mechanism of labor in narrow pelves, he has yet reached any fixed or definite conclusion with regard to the manner in which the head enters and passes the brim. In his first voluminous paper he cites Meigs, Hodge, and Leishman to show that "the vertex does enter the brim." He also adds that Hodge says "the head is not flattened out in narrow pelves, as represented by Simpson, but demonstrates that one pole or extremity of the biparietal diameter rests on the pubes, and *the other glides over against the promontory*, making the head oblique at the brim." "These observations of Meigs, Hodge, and Leishman are," he adds, "*precisely* what I have observed in my own practice." In addition to these observations of his own practice, to clinch still further the proof of this mechanism, he in his second paper quotes from Milne as follows: "In vertex presentations the chin lies to the sternum, and therefore the vertex and the biparietal part of the head enters the brim first; that is, *with the larger diameter—the biparietal—opposed to the antero-posterior*." Now, this of course pledges Dr. Wilson to the passage of the biparietal diameter through the conjugate. But, in a rider tagged on to the end of his third paper, he thus contradicts this observation of his own practice: "When the case is left to the natural efforts, the head is moulded and flexed so that the greatest conjugate (biparietal) diameter enters the brim and *descends to the side of the minimum point of narrowing in the pelvic opening*, and therefore the head is nipped in its descent by the narrow point (stricture) of the pelvis *in advance of the biparietal diameter*."

Here are two different mechanisms of descent executed simultaneously, not by the two biparietal diameters of the infant Janus in Hecate's labor, but by the single biparietal diameter of the ordinary unmythological human fœtus. By the one mechanism, the biparietal passes obliquely through the conjugate diameter; by the other, directly to one side of it. In other words, the biparietal diameter is in two different places at one and the same time,—a trick indeed worth knowing. But since it is impossible for a finite human mind to believe in both of these cranial movements *simultaneously*, the only way out of

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this difficulty is to believe in both *alternately* in rapid succession.

2d. I am represented in Dr. Wilson's second paper as *disregarding* in version "the rising up of the *arms*, even directing us to proceed to deliver, when the pelvis is ample, without restoring the *arms*." Now I have never advised such a practice, and all that I have said that could possibly be so construed is the following sentence: "In cases of pelves known to be ample, I can *conceive* of its being perfectly justifiable to follow Giffard's and Froriep's plan of dragging the head through with the impacted *arm* extended above rather than that of losing golden minutes in liberating it." I do not say "arms," but *arm*, and the incorrectness of the above assertion I pointed out to Dr. Wilson in my reply to his first paper. But he has seen fit to repeat it more than once in another form, thinking possibly that the repetition of an incorrect statement makes it correct. In his comment on this mere hint of mine,—a hint referring to manual delivery in *ample* and not narrow pelves, a hint which I have not yet found occasion to put in practice, but which he calls my "*rule for obstetric guidance*," he says: "In my opinion, no more dangerous rule for obstetric guidance than this has been announced since the publications cited, and Dr. Goodell may share jointly with these gentlemen the honors derived from it." Perhaps it may prove a source of gratification to him to learn that "the honors derived" from this "dangerous rule," I can "share jointly," not only "with these gentlemen," but also with Millot[1] and Lachapelle,[2] Paré,[3] Guillemeau[4] and Deventer[5] whose experience in turning has never been surpassed; with Petit,[6] who defends it by a long argument; with Jacquemier,[7] Robert Lee,[8] Velpeau,[9] and Schroeder;[10] and last, not least, with two gentlemen whom Dr. Wilson respects very highly, and whom, in this discussion he has repeatedly cited as excellent authorities—Denman[11] and Smellie.[12]

3d. I have not *denied* that Dr. Meigs applied the forceps *to the sides of the child's head.* But I have shown, by quotations from his writings, that he deemed such an application, *when the*

[1] Supplement à tous les traités d'Accouch., vol. ii., p. 40.
[2] Pratique des Accouch., Paris, 1821, vol. i., pp. 102, 313.
[3] Opera, Lib. xviii., cap. xxxiii.
[4] De la Grossesse, Paris, 1642, lib. ii., p. 192.
[5] Novum Lumen, Lugduni, 1733, cap. xlv., p. 198.
[6] Cours d'Accouch., Paris, An vii., tom. i., p. 314.
[7] Manuel des Accouch., Paris, 1846, vol. ii., p. 352.
[8] Lectures on Midwifery, Philada., 1844, p. 322.
[9] Traité Complet, Paris, 1835, p. 311.
[10] Manual of Midwifery, New York, 1873, p. 184.
[11] Introduction to Midwifery, chap. xiv., secs. 3 and 5.
[12] Midwifery, vol. i., chap. iv., sec. 2: also Collections, xxxii., case ix.

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head is transverse at the brim of a narrow pelvis, PREPOSTEROUS, and that he declared that COMMON SENSE would dictate the application to the face and occiput. Again, I have shown by quotations from Dr. Warrington's *Obstetric Catechism* that this experienced teacher considered that if the head is arrested at the superior strait TURNING WOULD BE SAFER than the use of the forceps, unless the practitioner had much experience in the use of that instrument. I shall not, of course, dispute Dr. Wilson's assertion, that he has repeatedly seen Dr. Meigs apply "the forceps at the brim to the sides of the child's head," or that he has heard, as he implies, Dr. Warrington teach for ten years the exclusive use of the forceps when the child's head is arrested at the brim. But I shall beg you to observe that it is Dr. Wilson, and not I, who thus charges these distinguished gentlemen, the one with practising what he did not teach, the other with teaching in private what he did not think proper to publish.

4th. Dr. Wilson says in his second paper that I am "mistaken" in saying that he "quoted Hodge as advising the application of the forceps to the sides of the head *when at the brim.*" (The italics are his). But since our whole discussion referred to the management of the head "*when at the brim,*"—for of course version could not be resorted to after the head had passed the brim,—if Dr. Wilson did not refer to the course advised by Dr. Hodge when the fœtal head is in that position, I utterly fail to understand to what he does refer in the following sentence from his first paper: "He (Hodge) further states that with a pelvis of three inches in the antero-posterior diameter, the forceps should be applied to *the sides of the child's head*, which can be done without accident to the child, and with but little or no discomfort to the mother." If this does not mean "the application of the forceps to the sides of the head *when at the brim*," then I am forced to conclude that Dr. Wilson has accepted Talleyrand's definition of language.

Further, in Case VI. of my *Clinical Memoir*, I say, "The head was perched above the brim, with the occiput looking toward the left ilium. Failing to get the blades over the sides of the head, I had to content myself with their oblique application; but the head being a large one, they did not hold well, and we therefore decided to turn." In Dr. Wilson's comments on this case he says, in his first paper: "In her fifth confinement Dr. Goodell saw her. He informs us that the forceps slipped. It was evident, therefore, they were not applied as taught by Hodge." Now let us box the compass of this fœtal head. It was *above the brim.* It was *transverse* and to the left. Failing to get the blades on the *sides* of the head, I applied them

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obliquely,—precisely as Hodge teaches. They slipped, as Hodge's forceps will sometimes slip from a large head. "It was evident, therefore," remarks Dr. Wilson, "they were not applied as taught by Hodge." Now, in his second paper, Dr. Wilson observes *correctly* that "Dr. Hodge prefers that the forceps should be always applied to the sides of the head, except when it presents *obliquely* or *transversely* at the brim." According, then, to Dr. Hodge I should not have tried to apply the blades to the sides of the head. But, according to Dr. Wilson, in getting them on obliquely I did not follow Hodge's directions. Am I then to understand that he chides me for not adjusting the blades over the face and occiput?

Again, in this discussion, which at the outset was limited to "Whether in these transverse cranial positions turning has advantages over the application of the forceps to the sides of the child's head?" (*Clinical Memoir*, p. 21). Hodge is Dr. Wilson's mainstay, almost his "only stock and store." He is constantly referring to that author, and quoting his success with the forceps,—a success beyond that of any of the other cited authors who applied the forceps invariably to the sides of the head. Now, since in all these quotations it appears that Dr. Wilson did not mean that Hodge applied the forceps to the sides of the head at the brim, and since the most remarkable cases of forceps-delivery in narrow pelves he has cited, come from men who did not apply that instrument to the sides of the head, the reader cannot evade the logical inference that, after all, Hodge's oblique application at the brim is a more effectual one than Dr. Wilson's biparietal application. Indeed, by this fatal admission of Dr. Wilson's, I myself am beginning to become a convert to Hodge's fronto-mastoid application of the forceps at the brim,—an application which, in the face of Dr. Wilson's great indebtedness to Hodge in this discussion, he strangely enough calls, in his second paper, a "reprehensible procedure."

5th. Dr. Wilson does me too much honor in attributing to me, in his second paper, the remarkable experience, in applications of the forceps at the brim, of having prolapse of the cord "in the ratio of twice in three cases." This experience is not mine, but that of Chailly-Honoré, duly credited by quotation marks and by a marginal reference,—the *ipsissima verba* of an eminent author, whom, as a strong partisan of the forceps *versus* version, Dr. Wilson has quoted no fewer than six times, but whom he wisely quotes no more.

6th. Dr. Wilson says in his third paper: "Simpson informs us that he turned and delivered in two or three minutes,—Dr. Goodell accomplished the same thing in three minutes." I have never claimed, directly or indirectly, to have "*turned and de-*

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livered" in three minutes; but to have delivered within three minutes after traction and propulsion had been begun,—that is, after turning, after the breech and body had dilated the soft parts and were born, after the arms had been brought down, and the head alone remained for delivery. This mistake I pointed out to Dr. Wilson in my *Reply*, but he has seen fit to repeat it, and I therefore correct it in precisely the same language that I used before.

7th. There are some slight objections to the two cases, viz., that of the Princess Charlotte, and the one reported by Dr. Mayles,—cited by Dr. Wilson as "*illustrative*" of the dangers from shock and from post-partum hemorrhage after "*such rapid labors*" as Simpson and I are alleged to have caused by version. To begin with the less aristocratic case, Dr. Mayles (*Obstetrical Journal of Great Britain*, 1874, p. 405) does not take the trouble to note the presentation, and since also the child was born in a few minutes' time, with "the placenta attached," and before the doctor and the nurse reached the woman, I think we may venture to assume that the vertex presented and that the child was not turned. These are the only objections to this "*illustrative case*." With regard to the other case, the child presented by the vertex, which remained *first* throughout the labor, and the Princess died from either shock, hemorrhage, or heart-clot, induced, not by a "*rapid labor*," but by a very *tedious* one, lasting fifty hours, viz., from Monday at 7 P.M., when the membranes broke, to Wednesday at 9 P.M. (*London Medical Repository*, December, 1817, p. 536, and *Memoir of the Princess Charlotte*, London, 1818). These are the only objections to *this* "illustrative case," only these and nothing more. In my humble opinion these two cases, carefully selected from "many illustrative cases" whose "list might be increased indefinitely," need not deter us from turning,—certainly not by their appositeness.

8th. By devoting more than a page of his third paper, bristling with quotations, to show that the child can be kept alive above a rigid perineum by "a very simple expedient familiar to the profession for a century," viz., by conveying air to it,—Dr. Wilson implies that from ignorance of this expedient I "rudely and wantonly" drag "the child's head through the perineum at the risk of maiming the mother, and thereby rendering her a wretched sufferer for the balance of her life." Now, in my paper on *Head-Last Labor* (*Philadelphia Medical Times*, March 20, 1875), a paper which, in this discussion, Dr. Wilson has gone out of his way to attack, I provide for such a contingency as a rigid perineum, and advise that "if air cannot be communicated to the mouth or to the nostrils of the child

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through the gutter made by the physician's fingers, he must disregard the consequences to the mother, and forcibly deliver by traction, or, this failing, by the forceps." I also showed, in my *Reply*, that the perineum has been already so stretched open by the half-breech, that no great laceration could at the worst be produced by the passage of the head. Indeed, Dr. Wilson himself admits that "the increased amount of dilatation required for the delivery of the head after the breech and shoulders are born will be *but very slight.*" Had Dr. Wilson only had the time to read me attentively, he would have seen that we agree perfectly on this point, and he would have saved the Society much time, and himself much foolscap.

9th. "Are we to accept," asks Dr. Wilson, in his third paper, "on the evidence of a *single* case, the bold statement 'that in nine out of ten cases of rupture into the rectum, the forceps will be found to have been the cause?' The evidence is altogether insufficient." Now, the evidence that I gave was by no means the "single case," that of Mrs. L., so opportunely offered by Dr. Wilson in his own argument. I adverted to "quite a large number of cases of torn perineum" which I had operated on. But since he calls for "opinions derived from the observation of facts" other than mine, let me cite the testimony of a man who has probably operated for this lesion more frequently than any other physician. Emmett declares (*Medical Record*, March, 1873, p. 121) that "when the laceration has been so extensive as to involve the sphincter ani, and a portion of the recto-vaginal septum, it is the result *generally of instrumental delivery*, ... and may occur in the hands of a most skilful operator." Prof. W. T. Howard (*Transactions Medical and Chirurgical Faculty of Baltimore*, 1875, p. 106) contends that complete laceration "is *usually* the result of instrumental delivery." "The forceps is quite often," writes Jacquemier (*Manuel des Accouch.*, vol. ii., p. 309), "not only among primiparæ, but in women who have borne many children, the cause of the more extensive lacerations of the perineum. The complete and very extensive lacerations observed in many women operated on by Dieffenbach and Roux were caused by this instrument at a second, fourth, and fifth labor." Joulin (*Traité Complet*, Paris, 1867, p. 1050) enumerates among the lesions produced by the forceps in the hands of a skilful physician (*praticien habile*) "the lacerations of the perineum, which cannot always be avoided." Madame Lachapelle considers (*op. cit.*, 8th Memoir, p. 140) "the imprudent application of the forceps"—for every one is not "a master with forceps"—as the most frequent cause of complete lacerations of the perineum. She further states (vol. i., pp. 46, 70, and 71) that "in

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the last stage of labor the forceps *almost inevitably* causes a laceration of the perineum, unless it is withdrawn just before birth." Dewees advises (*Midwifery*, 1853, par. 796) the same thing for the same reason. Finally, let me jog Dr. Wilson's memory by one more citation. Out of seven cases of complete laceration of the perineum operated on by Dr. D. Hayes Agnew (*Penn. Hospital Reports*, 1868), five were positively ascertained to be owing to the use of the forceps. By a curious coincidence I also find that *two* of these five cases were patients of Dr. Wilson's; but I will do him the justice to add that he did not deliver them. Yet, in spite of this fact, he indignantly adverts to "*the evidence of a single case.*"

10th. In his last paper he quotes from W. H. Jones, and very inaccurately, the statistics of Dubois's cases of labor in narrow pelves, and adds: "In two cases where the pelvis was narrowed to *a little more* than 2.5 inches, the forceps afforded the means of extracting alive two children at full term. This table of statistics gives us also five cases of detruncation of the child. *There is no evidence showing that more than one person made traction upon the child's body.*" To this I reply, in the first place, that these two forceps-cases in pelves "*a little more than* 2.5 *inches*" are as follows: (*a*) Conjugate measured 2.9 inches; child weighed *four* pounds, and died on the twenty-fifth day; mother died from peritonitis. (*b*) Conjugate measured 2.7 inches; length of labor 50 hours; child weighed *four* pounds, and had facial paralysis; mother did well. (Jones, *Management of Labor in Contracted Pelves*, Appendix). In the second place, the above "five cases of detruncation," twice triumphantly cited by Dr. Wilson as an evidence that the head may be decapitated by the traction efforts of one person, are, unfortunately for him, not those of detruncation by traction. They were not *accidents* but *operations*. Dubois, whose cases they were, and other French obstetricians, not understanding the mechanism of head-last labors in narrow pelves, and fearing the extension of the head by traction, amputated the neck close to the head with a strong pair of curved scissors, in order both to gain room for the cephalo-tribe, and to expose the *foramen magnum* as the means of exit for the brain. Had Dr. Wilson read Jones's little brochure more carefully he would not have made this very unfortunate mistake.

11th. With regard to the child's neck, I never said, as Dr. Wilson implies, that the "unaided efforts" of one person are not equal to its luxation, or even to its decapitation. For I have in my Index Rerum references to cases, to which he is heartily welcome, in which the *braced* and prolonged traction-efforts of a single person effected both luxation and detruncation.

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But I gave classical examples in which the efforts of two persons were not able to effect either of these lesions,—one of them, in which the child was born alive, being unwittingly furnished by Dr. Wilson himself. Nor did I assert that *every* child's neck can "with safety" withstand a strain of one hundred and thirty pounds. On the contrary, I offer an example (Case X.) in which, under such a weight *repeatedly applied*, the spinal column finally gave way. What I do say (*Philadelphia Medical Times*, March 20, 1875, p. 387) is, "But I do not believe it possible for a physician even to break the neck of a mature child, much less to behead it, if he applies a *steady* traction-force by *pushing* the neck and body of the child backward and downward, just as he makes downward pressure on the lock of the forceps." For I show that by this method of traction "one can for thirty seconds exert a steady downward pressure of about *ten pounds more than half the weight of one's body.*"

Again, I showed from a passage from Hodge, which Dr. Wilson was kind enough to furnish me with, that children have been born alive after "*the strength of two individuals* have been applied to the body of the child, and that of three, four, or even more attendants to the body of the mother." This is an ugly fact to meet—a very ugly fact—but it must be met at all hazards; and how does Dr. Wilson meet it? He is usually frugal of arguments, but here he lavishes two. In the first place, he contends that "Dr. Hodge does not call them physicians," that is, the individuals and attendants tugging away at mother and child were not physicians. As if traction is not traction unless made by a physician; and as if, by a wise provision of Providence, the fœtal neck readily snaps and parts only under official traction, and not under lay traction. In the second place, he rejoins, *ore rotundo*, that Dr. Hodge, "the great conservator of orthodox obstetricy," does not *sanction, recommend, or in any way countenance* "such a proceeding as just narrated." Pray, what earthly bearing has this answer on the question at issue? Is the human fœtus a respecter of persons? And does it courteously make the tenacity of its neck depend on the *sanction* and *countenance* of "the great conservator of orthodox obstetricy?" I protest, gentlemen, that after such a specimen of ratiocination, I dare not yield to the temptation of calling this brace of arguments a *non sequitur*, lest I might be met with the retort of the recruiting sergeant in "Tom Jones,"—"You're another, if you come to that. I'm no more a *sequitur* than yourself."

But Dr. Wilson is more happy in another argument, one levelled at my statement that the gallows-drop rarely destroys life by breaking the neck of the criminal, an argument so

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unanswerable that I fear that, after all, I shall have to yield the point of the remarkable strength of the child's neck. "Notwithstanding this pleasing picture," he urges very forcibly, "and the comforting assurance of Dr. Goodell that the neck may not break, I believe few men receive the noose with pleasure." *Few men receive the noose with pleasure!* How true this is; and yet, to my shame be it said, I have not hitherto thought of this in connection with breech and version cases; but I shall often think of it hereafter. In addition to the *à priori* and *à posteriori* modes of reasoning, medical logicians must in future teach the *sus. per coll.*

12th. In his second paper Dr. Wilson remarks: "You will remember that Dr. Goodell denied this reductibility of the child's head, or the possibility of delivery at term, with a pelvis of two and a half inches, and, greatly to my astonishment, he questioned the truthfulness of Madame Lachapelle's statistics." The cases Dr. Wilson here cites are those of conjugates of $2\frac{3}{8}$, 2.5, and 2.75 inches, and were *natural* labors—"by the efforts of nature alone." Nor have I denied, but positively affirmed, that the unaided, and therefore unhampered efforts of nature, by perfectly moulding the head, will deliver where the forceps utterly fails. As vouchers for this statement I then cited Cazeaux, Chailly-Honoré, and Gardien. To these names I am now able to add Baudelocque,[1] Capuron,[2] and Desormeaux,[3] who, although applying the forceps invariably to the sides of the head, contend that this instrument does not imitate nature, which moulds the head better, and adduce two of these very cases in proof. I thank Dr. Wilson for saving me the trouble of citing these cases to substantiate my position. I also thank him for here giving me the opportunity of tendering an humble apology which I owe to the memory of that illustrious midwife, Madame Lachapelle. I doubted the accuracy of her statements in regard to delivering by version in very narrow pelves, because, through culpable carelessness, I overlooked the fact that W. H. Jones gives the conjugates of her cases in French inches. She herself remarks (11th Memoir, p. 436), as I have recently discovered, that "2.25 English inches equal $2\frac{1}{12}$ French inches." The French *pied de roi* measures 12.79 English inches and the *pied usuel*, being one-third of a *metre*, measures 13.12 English inches. I fancy, however, that the *pied du roi* is the measure used by the older French obstetricians, for the decimal system did not at once find favor. This important difference between the length of

[1] Accouchemens, par. 1607, 1608, et seq.
[2] Cours Theorique et Pratique, Paris, 1823, p. 515.
[3] Dictionnaire en 30, Article Forceps, p. 370.

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the French and the English foot must be borne in mind whenever pelvic measurements are cited from French authors, or from those earlier German writers who, like Stein, adopted the *Pariser Zoll.* Even W. H. Jones (*op. cit.*) has overlooked this distinction. For instance, the cases which he cites from Dubois, of conjugates "above 3.5 inches," and "between 3.5 and 3 inches," should read, "above 3.7 inches," and "between 3.7 and 3.15 inches." This correction I beg the reader to make when he refers to these cases in my *Reply.*

13th. A little further on, Homberger and Hasslocher, whoever they may be, are cited by Dr. Wilson as having delivered by the forceps in pelves measuring 2 and 2.25 French inches in the conjugate diameter. Now, apart from the melody and alliteration of these names, I can conceive of no reason why they have been introduced into this discussion. The pelvis in each case was distorted by malacosteon—a disease in which the bones are so flexible as to yield to the pressure of the fingers—and this discussion has nothing to do with this lesion.

14th. Not satisfied with subjecting in his first paper my tabulated cases to exegetical torture, Dr. Wilson makes the child in Case IX. "dead," when it was alive, and is still alive. In Case V. he twice very carelessly ignores the uncongenial fact that I, by version, delivered the woman twice (since thrice) of living children. I may also add that when the child is undersized, its weight is the burden of his refrain, and he criticises the case with pre-Raphaelite minuteness of detail. When the child is a large one he forgets to give its weight, and either glosses over the case, or else flutters away from it. These are by no means all the evidences of his carelessness that I could adduce, but I do not wish to weary your patience. I will simply ask you, when reading this discussion, to examine for yourselves whenever Dr. Wilson says that I *deny* or *assert* anything.

Finally. I have before referred to Dr. Wilson's respect for Moses and the prophets, and am, therefore, not surprised to find him impressively, and very irrelevantly, quoting the sixth commandment, "Thou shalt not kill!" Let me hasten to assure him that I also reverence the decalogue, and that remembering moreover the words of the apostle, that "Whosoever shall keep the whole law, and yet offend in one point, he is guilty of all," I strive, while humbly trying to keep the sixth commandment, not to fail in observing the ninth also.

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